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Service Manual

ORDER NO.
CRT3825

CD RECEIVER

DEH-1950G/XN/ES
DEH-1950G/XN/ES1
DEH-1950/XN/ES

COMPACT disc DIGITAL AUDIO

This service manual should be used together with the following manual(s) listed below. For the parts numbers, adjustments, etc. which are not shown in this manual, refer to the following manual(s).

Model No.	Order No.	Mech. Module	Remarks
DEH-1950/XU/CN5	CRT3821		
CX-3166	CRT3582	S10.5STD	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZA. OCT. 2006 Printed in Japan

EXPLODED VIEWS AND PARTS LIST

PACKING(Page 6)

PACKING SECTION PARTS LIST

*:Non spare part

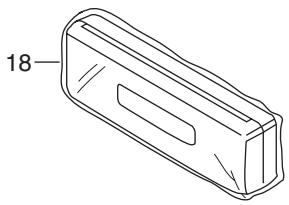
Mark	No.	Description	DEH-1950/XU/CN5	DEH-1950G/XN/ES
	13	Carton	CHG6007	CHG5986
	14	Contain Box	CHL6007	CHL5986
	17-1	Owner's Manual	CRB2281	CRD4146
*	17-3	Warranty Card	ARY7046	Not used
	17-4	Installation Manual	Not used	CRD4139
	18	Case Assy	Not used	CXB3520

Mark	No.	Description	DEH-1950/XU/CN5	DEH-1950G/XN/ES1
	13	Carton	CHG6007	CHG6049
	14	Contain Box	CHL6007	CHL6049
	17-1	Owner's Manual	CRB2281	CRD4146
*	17-3	Warranty Card	ARY7046	CRY1250
	17-4	Installation Manual	Not used	CRD4139
*	17-5	Service Network	Not used	CRY1251
	18	Case Assy	Not used	CXB3520

Mark	No.	Description	DEH-1950/XU/CN5	DEH-1950/XN/ES
	13	Carton	CHG6007	CHG5987
	14	Contain Box	CHL6007	CHL5987
	17-1	Owner's Manual	CRB2281	CRD4146
*	17-3	Warranty Card	ARY7046	Not used
	17-4	Installation Manual	Not used	CRD4139
	18	Case Assy	Not used	CXB3520

Owner's Manual,Installation Manual

Part No.	Language
CRD4146	English, Spanish, Portuguese(B), Traditional Chinese, Arabic
CRD4139	English, Spanish, Portuguese(B), Traditional Chinese, Arabic



EXTERIOR(Page 8)

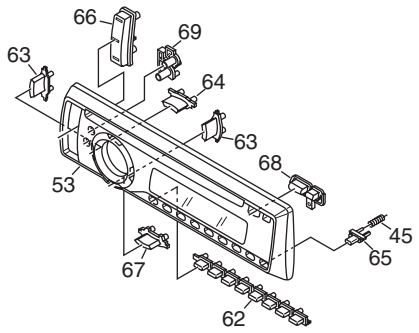
EXTERIOR SECTION PARTS LIST

Mark	No.	Description	DEH-1950/XU/CN5	DEH-1950G/XN/ES DEH-1950G/XN/ES1
	6	Sheet	CNM9404	Not used
	11	Tuner Amp Unit	CWN2131	CWN2128
	38	Detach Grille Assy	CXC7319	CXC7317
	40	Button(Detach)	CAC9382	Not used

Mark	No.	Description	DEH-1950/XU/CN5	DEH-1950G/XN/ES DEH-1950G/XN/ES1
	41	Button(1-6)	CAC9863	Not used
	42	Button(<,>,UP,DOWN)	CAC9864	Not used
	43	Button(SOURCE,BAND)	CAC9861	Not used
	44	Button(AUDIO,FUNC)	CAC9862	Not used
	46	Cover	CNS8744	CNS8758
	47	LCD	CAW1931	CAW1930
	49	Holder	CND3642	CND3646
	50	Lighting Conductor	CNV9301	CNV9308
	51	Rubber	CNV9302	CNV9310
	53	Grille Unit	CXC7052	CXC6977
	54	Knob Unit(VOLUME)	CXC7059	CXC7055
	57	CD Mechanism Module(S10.5)	CXK5700	CXK5701
	62	Button(1-6)	Not used	CAC9866
	63	Button(<,>)	Not used	CAC9867
	64	Button(UP)	Not used	CAC9868
	65	Button(Detach)	Not used	CAC9941
	66	Button(AUDIO,FUNC)	Not used	CAC9942
	67	Button(DOWN)	Not used	CAC9945
	68	Button(EJECT,CLOCK)	Not used	CAC9949
	69	Button(EQ,BAND)	Not used	CAC9950

Mark	No.	Description	DEH-1950/XU/CN5	DEH-1950/XN/ES
	6	Sheet	CNM9404	Not used
	11	Tuner Amp Unit	CWN2131	CWN2128
	38	Detach Grille Assy	CXC7319	CXC7318
	40	Button(Detach)	CAC9382	Not used
	41	Button(1-6)	CAC9863	Not used
	42	Button(<,>,UP,DOWN)	CAC9864	Not used
	43	Button(SOURCE,BAND)	CAC9861	Not used
	44	Button(AUDIO,FUNC)	CAC9862	Not used
	46	Cover	CNS8744	CNS8758
	47	LCD	CAW1931	CAW1930
	49	Holder	CND3642	CND3646
	50	Lighting Conductor	CNV9301	CNV9308
	51	Rubber	CNV9302	CNV9310
	53	Grille Unit	CXC7052	CXC7384
	54	Knob Unit(VOLUME)	CXC7059	CXC7055
	57	CD Mechanism Module(S10.5)	CXK5700	CXK5701
	62	Button(1-6)	Not used	CAC9866
	63	Button(<,>)	Not used	CAC9867
	64	Button(UP)	Not used	CAC9868
	65	Button(Detach)	Not used	CAC9941
	66	Button(AUDIO,FUNC)	Not used	CAC9942
	67	Button(DOWN)	Not used	CAC9945

Mark	No.	Description	DEH-1950/XU/CN5	DEH-1950/XN/ES
	68	Button(EJECT,CLOCK)	Not used	CAC9949
	69	Button(EQ,BAND)	Not used	CAC9950



CD MECHANISM MODULE(Page 10)

CD MECHANISM MODULE SECTION PARTS LIST

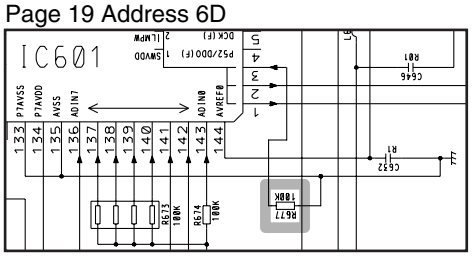
Mark	No.	Description	DEH-1950/XU/CN5	DEH-1950G/XN/ES DEH-1950G/XN/ES1 DEH-1950/XN/ES
	2	Connector(CN101)	CKS4808	CKS4182
	3	Connector(CN702)	CKS5283	CKS4185
	44	Roller	CNV8189	CNV7218
	48	Guide	CNV8448	CNV7799
	62	Collar	CNV8447	CNV8938

ELECTRICAL PARTS LIST(Page 34)

TUNER AMP UNIT

Circuit Symbol and No.	Part Name	DEH-1950/XU/CN5	DEH-1950G/XN/ES DEH-1950G/XN/ES1 DEH-1950/XN/ES
R676		RS1/16S104J	Not used
R677		Not used	RS1/16S104J

Page 19 Address 6D



KEYBOARD UNIT

Circuit Symbol and No.	Part Name	DEH-1950/XU/CN5	DEH-1950G/XN/ES DEH-1950G/XN/ES1
D1822	LED	CL-195PG-CD	Not used
D1824	LED	Not used	CL-195PG-CD
S1827	Rotary Encoder	Not used	YSD5010
S1831	Rotary Encoder	YSD5001	Not used
	LCD	CAW1931	CAW1930

Circuit Symbol and No.	Part Name	DEH-1950/XU/CN5	DEH-1950G/XN/ES DEH-1950G/XN/ES1
R1803		RS1/4SA561J	RS1/4SA471J
R1804		RS1/4SA561J	RS1/4SA471J
R1805		RS1/4SA561J	RS1/4SA471J
R1806		RS1/4SA561J	RS1/4SA471J
R1807		RS1/4SA561J	RS1/4SA471J
R1813		RS1/4SA681J	Not used
R1816		Not used	RS1/4SA471J
R1831		Not used	RS1/16S0R0J

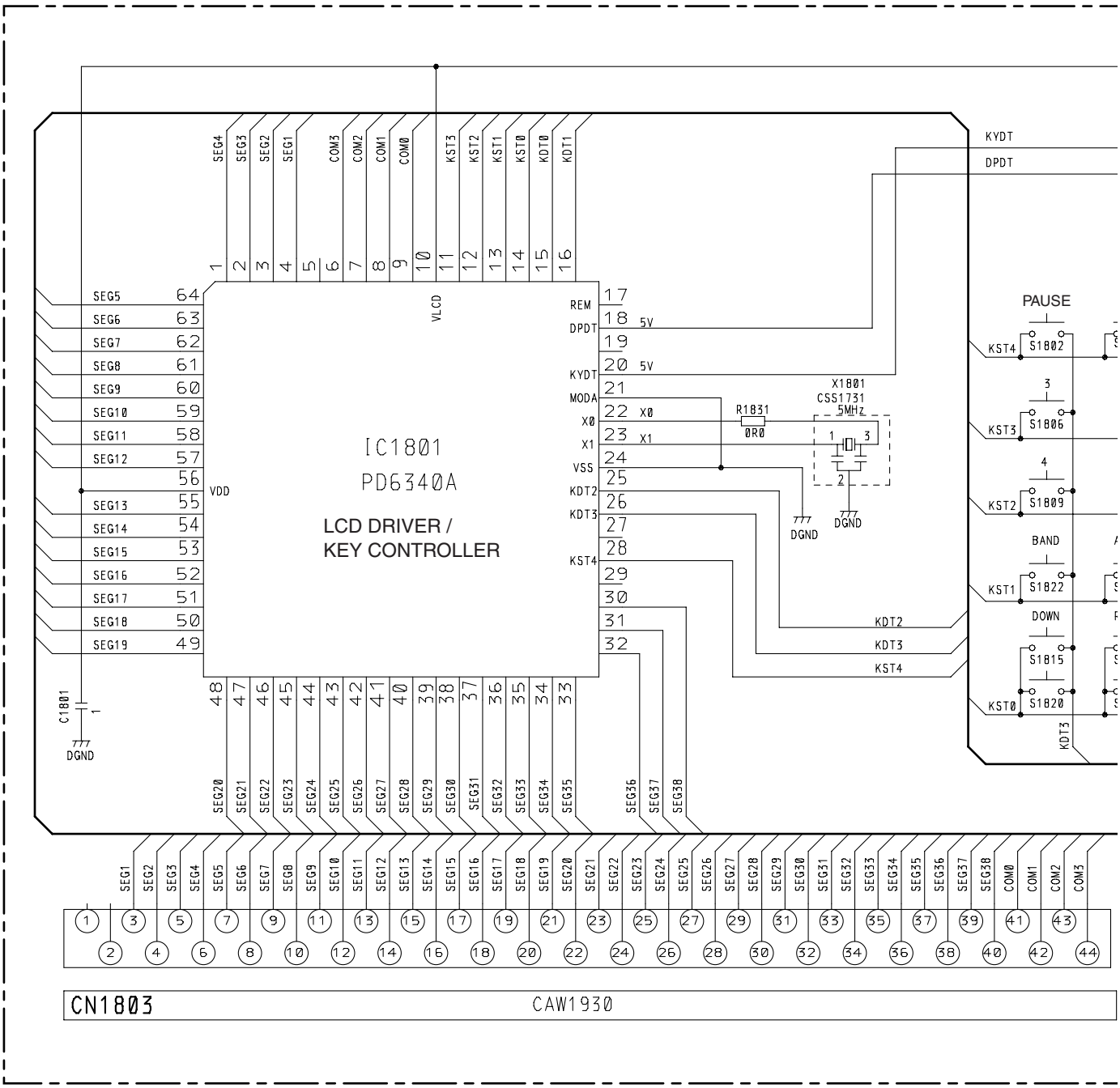
Circuit Symbol and No.	Part Name	DEH-1950/XU/CN5	DEH-1950/XN/ES
D1803	LED	CL-195PG-CD	CL-195SR-CD
D1804	LED	CL-195PG-CD	CL-195SR-CD
D1805	LED	CL-195PG-CD	CL-195SR-CD
D1806	LED	CL-195PG-CD	CL-195SR-CD
D1807	LED	CL-195PG-CD	CL-195SR-CD
D1808	LED	CL-195PG-CD	CL-195SR-CD
D1809	LED	CL-195PG-CD	CL-195SR-CD
D1812	LED	CL-195PG-CD	CL-195SR-CD
D1813	LED	CL-195PG-CD	CL-195SR-CD
D1814	LED	CL-195PG-CD	CL-195SR-CD
D1815	LED	CL-195PG-CD	CL-195SR-CD
D1816	LED	CL-195PG-CD	CL-195SR-CD
D1817	LED	CL-195PG-CD	CL-195SR-CD
D1818	LED	CL-195PG-CD	CL-195SR-CD
D1819	LED	CL-195PG-CD	CL-195SR-CD
D1820	LED	CL-195PG-CD	CL-195SR-CD
D1821	LED	CL-195PG-CD	CL-195SR-CD
D1822	LED	CL-195PG-CD	Not used
D1823	LED	CL-195PG-CD	CL-195SR-CD
D1824	LED	Not used	CL-195SR-CD
D1825	LED	CL-195PG-CD	CL-195SR-CD
S1827	Rotary Encoder	Not used	YSD5010
S1831	Rotary Encoder	YSD5001	Not used
	LCD	CAW1931	CAW1930
R1808		RS1/4SA561J	RS1/4SA681J
R1813		RS1/4SA681J	Not used
R1816		Not used	RS1/4SA561J
R1831		Not used	RS1/16S0R0J

CD CORE UNIT(S10.5)

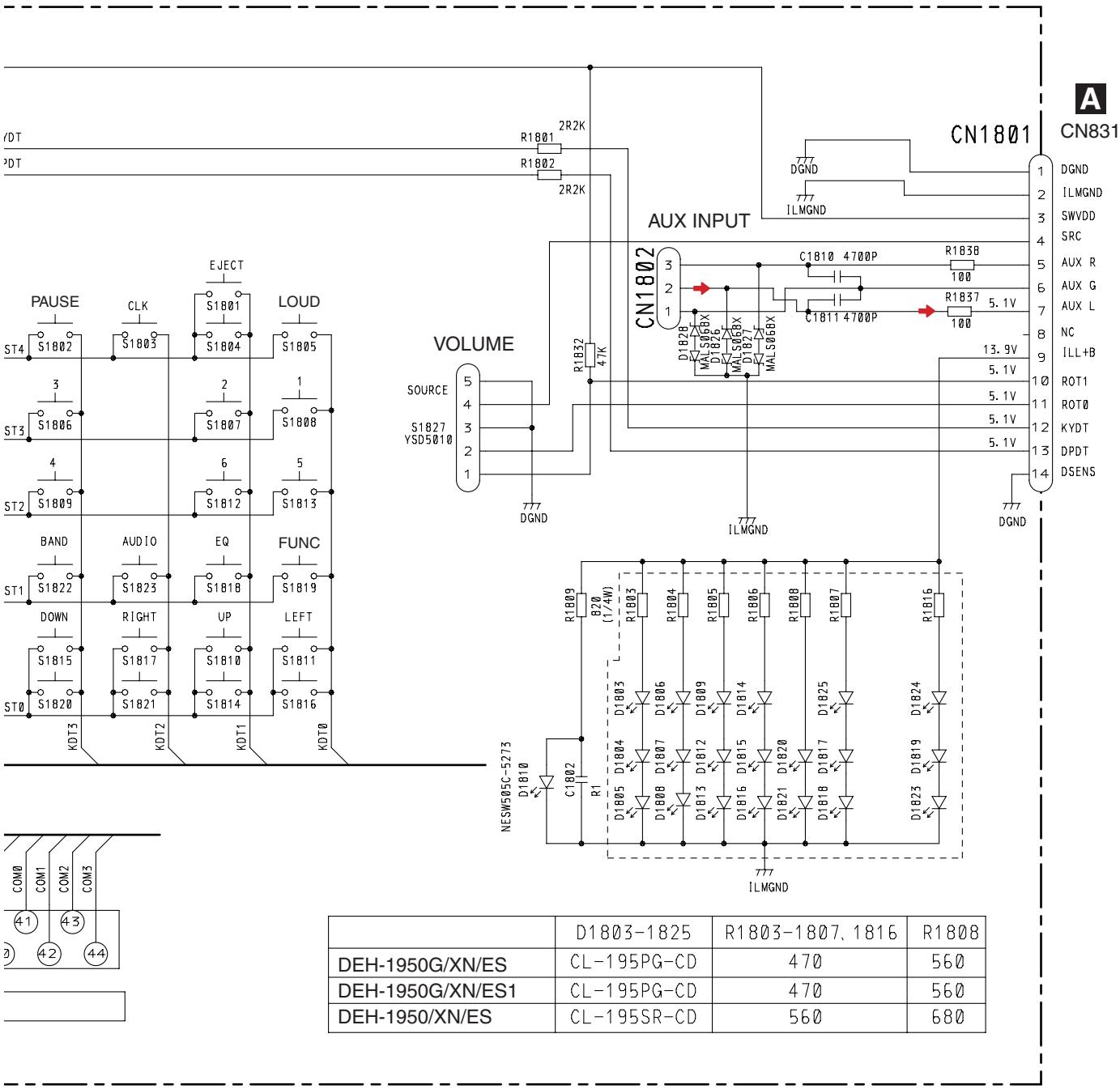
Circuit Symbol and No.	Part Name	DEH-1950/XU/CN5	DEH-1950G/XN/ES DEH-1950G/XN/ES1 DEH-1950/XN/ES
C209		CKSRYB104K10	CKSRYB104K16
C238		CKSRYB104K10	CKSRYB104K16
C240		CKSRYB104K10	CKSRYB104K16

BLOCK DIAGRAM AND SCHEMATIC DIAGRAM
KEYBOARD UNIT

Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



BF KEYBOARD UNIT

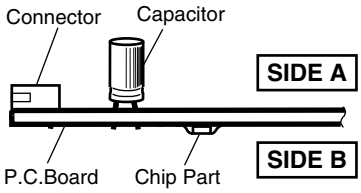


	D1803-1825	R1803-1807、1816	R1808
DEH-1950G/XN/ES	CL-195PG-CD	470	560
DEH-1950G/XN/ES1	CL-195PG-CD	470	560
DEH-1950/XN/ES	CL-195SR-CD	560	680

PCB CONNECTION DIAGRAM
KEYBOARD UNIT

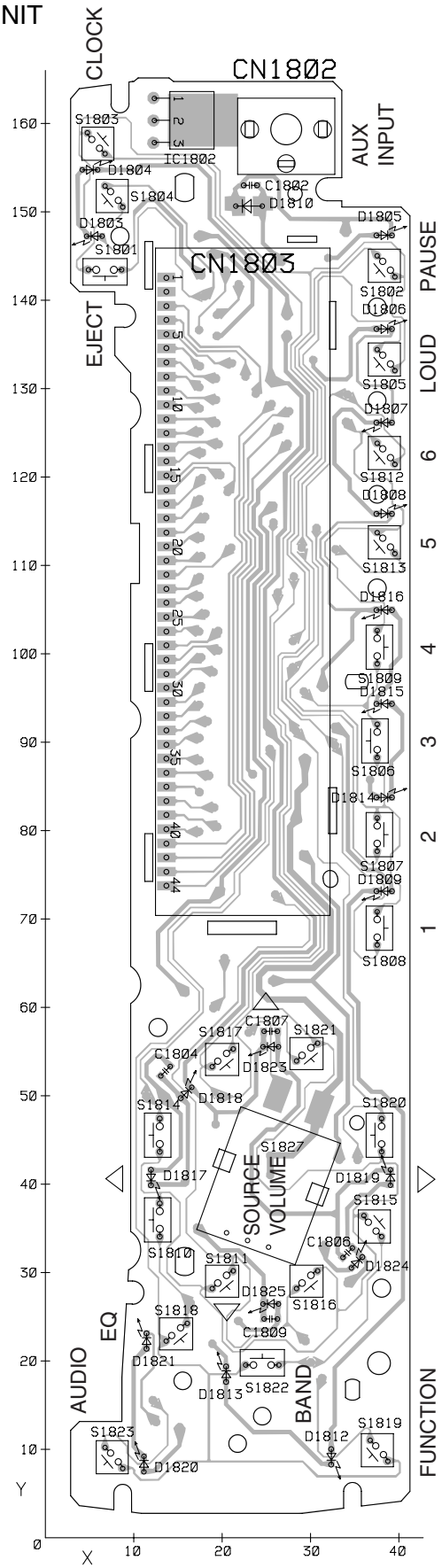
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



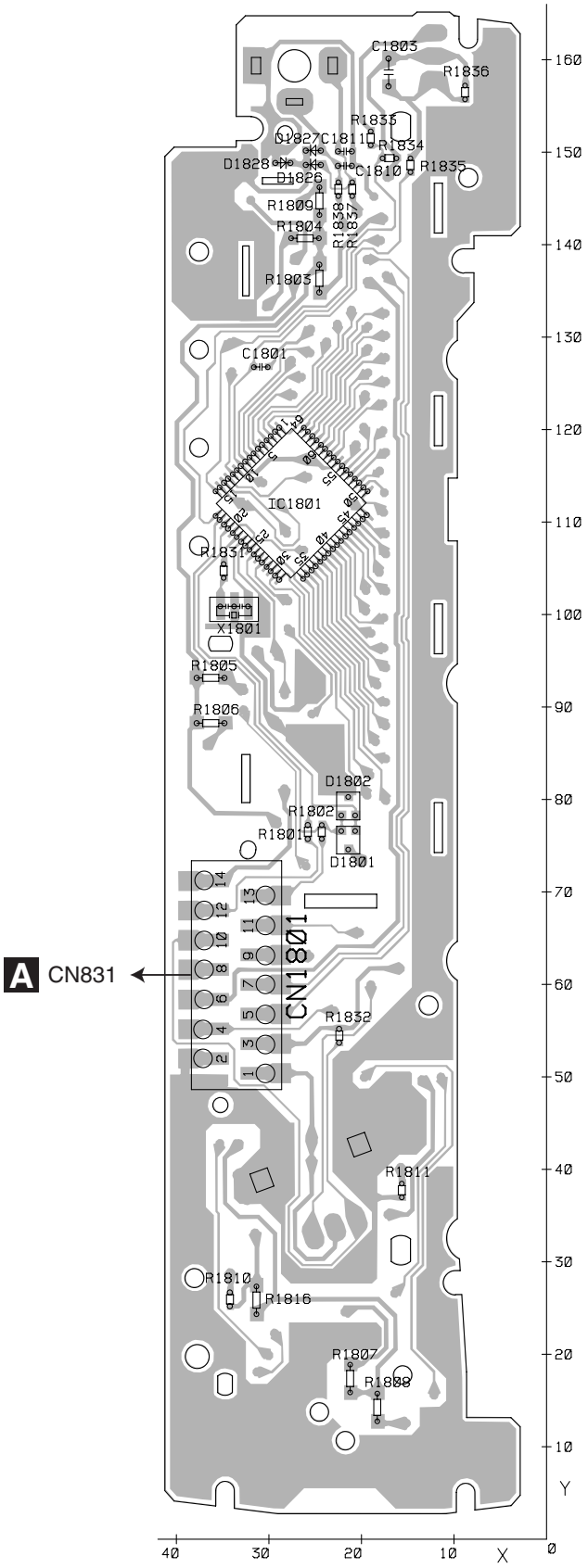
BF KEYBOARD UNIT

SIDE A



KEYBOARD UNIT

SIDE B



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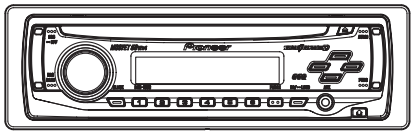
Service Manual



DEH-1950/XU/CN5

ORDER NO.
CRT3821

CD RECEIVER

DEH-1950/XU/CN5

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3166	CRT3582	S10.5STD	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly

For details, refer to "Important Check Points for Good Servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

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SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

● **Safety Precautions for those who Service this Unit.**

- **When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

Caution:

1. **During repair or tests, minimum distance of 13 cm from the focus lens must be kept.**
2. **During repair or tests, do not view laser beam for 10 seconds or longer.**

● **Service Precaution**

1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to check the grating.
5. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

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[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

1. SPECIFICATIONS

一般

额定电源 ..... 14.4 V DC
（容许电压范围： 12.0－14.4 V DC）
接地系统 ..... 负极型
最大电流消耗 ..... 10.0 A
Backup current ..... 2 mA or less
尺寸（宽×高×深）：
DIN
机身 ..... 178×50×162 毫米
前端部分 ..... 188×58×16 毫米
D
机身 ..... 178×50×162 毫米
前端部分 ..... 170×47×16 毫米
重量 ..... 1.3 公斤

音频

连续功率输出 ..... 22 W × 4（50 Hz至15 000 IIz， 5% THD， 4 Ω 载荷，双声道驱动）
最大输出功率 ..... 50 W×4
负载阻抗 ..... 4Ω（容许范围 4Ω－8Ω）
前输出最大输出电平 / 输出阻抗 ..... 2.2 V / 1 kΩ
低音 / 中音 / 高音:
低音
频率 100Hz
增益 ..... ±13 dB
中频
频率 1kIIz
增益 ..... ±12 dB
高音
频率 10kIIz
增益 ..... ±12 dB
响度等高线
低 ..... +7dB（100Hz），+4dB（10kIIz）
高 ..... +10dB（100Hz），+6.5dB（10kHz）
（音量：-30dB）

CD 播放机

系统 ..... CD音频系统
可用碟片 ..... CD
信号格式:
取样频率 ..... 44.1 kHz
量化比特数 ..... 16；线性
频率特征 ..... 5 Hz至20 000 Hz（±1 dB）
信噪比 ..... 94 dB（1 kHz）（IEC-A网络）
动态范围 ..... 92 dB（1 kHz）
声道数 ..... 2（立体声）

FM调谐器

频率范围 ..... 87.5 MHz－108.0 MHz
有效灵敏度 ..... 8 dBf（0.7 μV/75 Ω，单声道，S/N： 30 dB）
信噪比 ..... 75 dB（IEC-A网络）
失真 ..... 0.3 %（65 dBf，1 kHz，立体声时）
0.1 %（65 dBf，1 kHz，单声道时）
频率响应 ..... 30 Hz－15 000 Hz（±3 dB）
立体声分离度 ..... 45 dB（65 dBf，1 kHz时）

AM调谐器

频率响应 ..... 531 kIIz－1 602 kIIz（9 kHz）
530 kHz－1 640 kHz（10 kHz）
有效灵敏度 ..... 18 μV（S/N: 20 dB）
信噪比 ..... 65 dB（IEC-A网络）

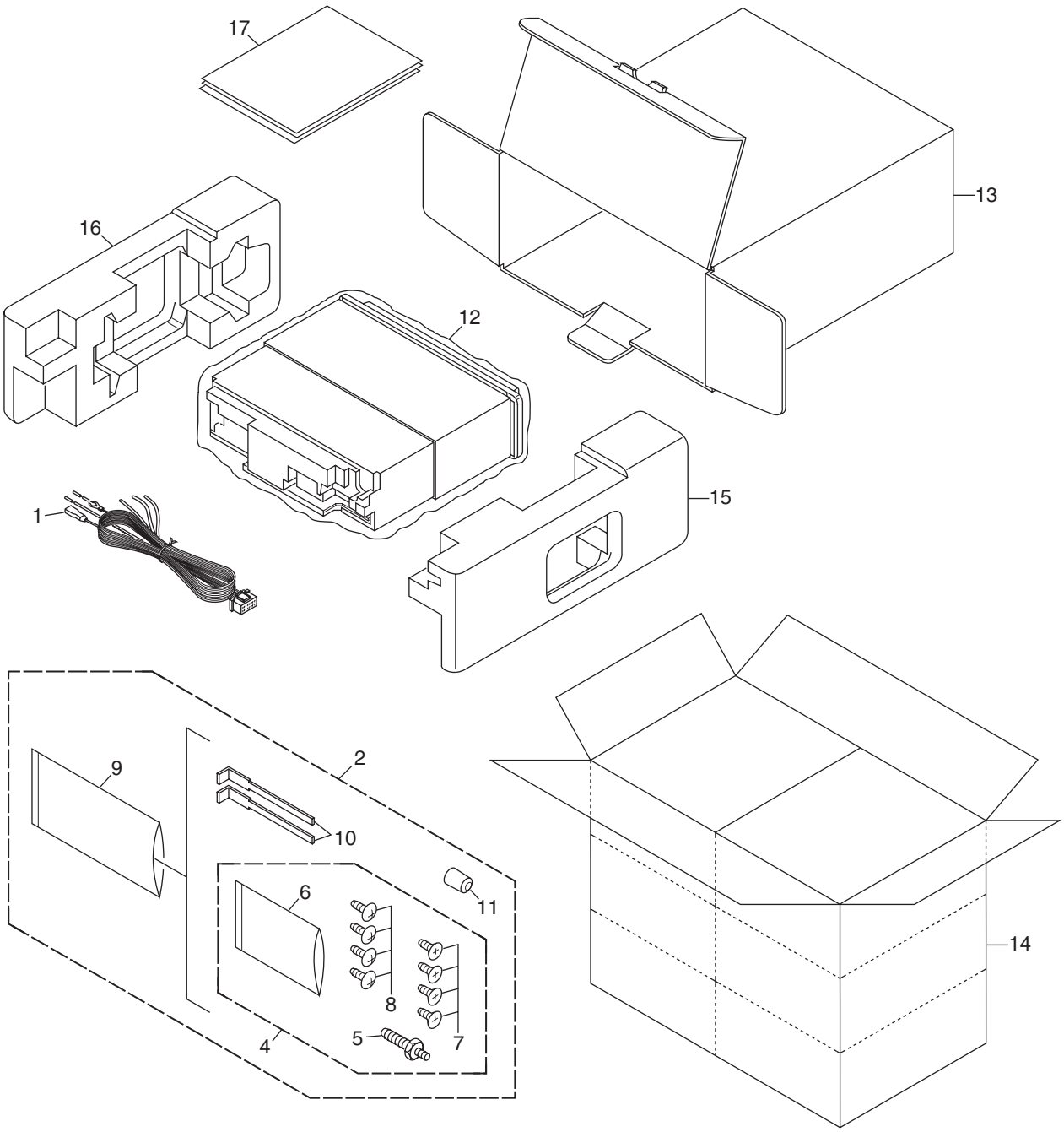
注意

因产品改进，规格和设计若有变更，恕不另行通知。■

2. EXPLODED VIEWS AND PARTS LIST

*NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.*
• The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
• Screw adjacent to▽mark on the product are used for disassembly.
• For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions,apply as you think it appropriate.)

2.1 PACKING



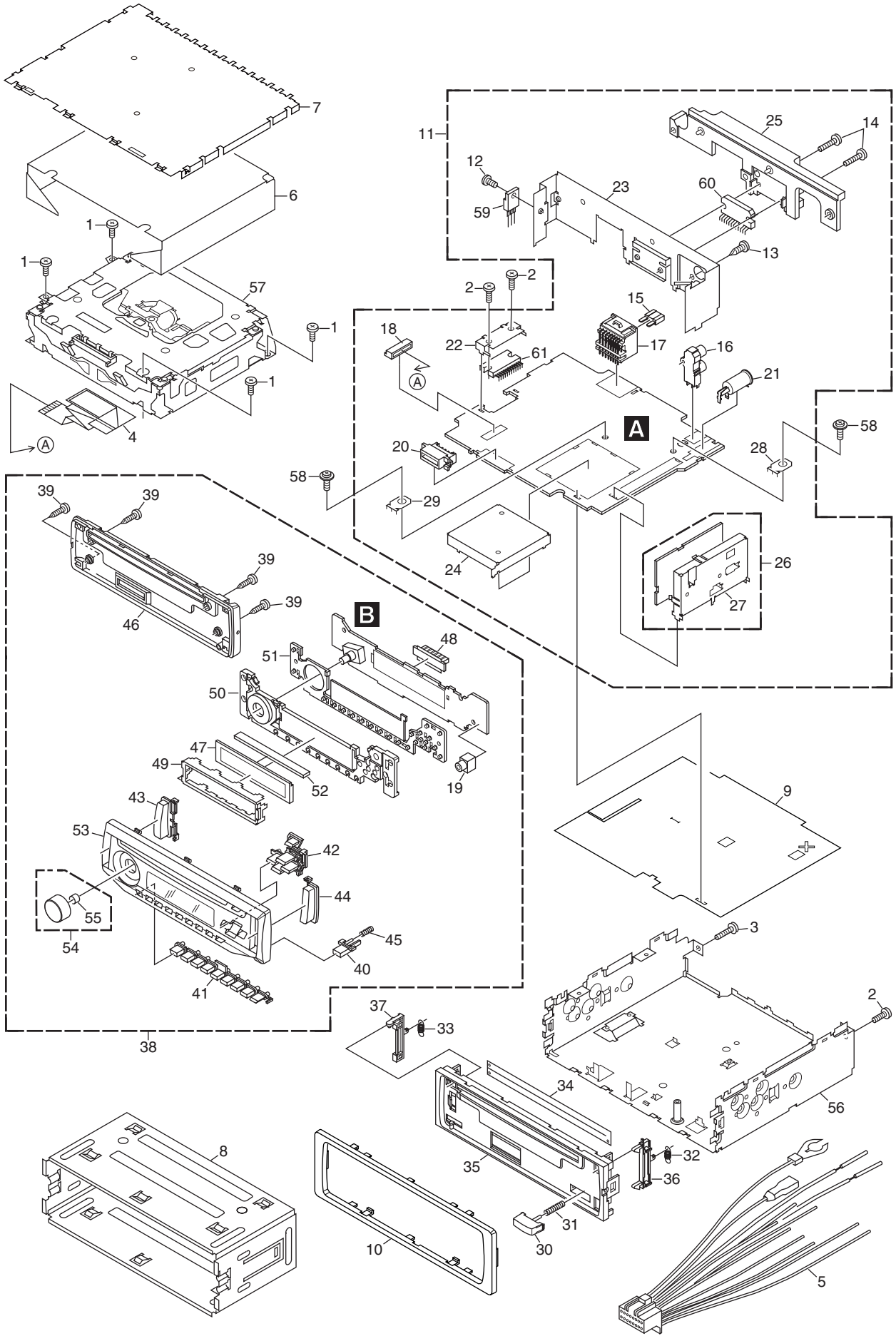
PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Cord Assy	CDP1017
	2	Accessory Assy	CEA6708
	3	•••••	
	4	Screw Assy	CEA3849
	5	Screw	CBA1650
*	6	Polyethylene Bag	CEG-127
	7	Screw	CRZ50P090FTC
	8	Screw	TRZ50P080FTC
	9	Polyethylene Bag	CEG1160
	10	Handle	CND3707
	11	Bush	CNV3930
	12	Polyethylene Bag	CEG1373
	13	Carton	CHG6007
	14	Contain Box	CHL6007
	15	Protector	CHP3279
	16	Protector	CHP3280
	17-1	Owner's Manual	CRB2281
	17-2	Caution Card	CRP1310
*	17-3	Warranty Card	ARY7046

Owner's Manual,Installation Manual

Part No.	Language
CRB2281	Simplified Chinese

2.2 EXTERIOR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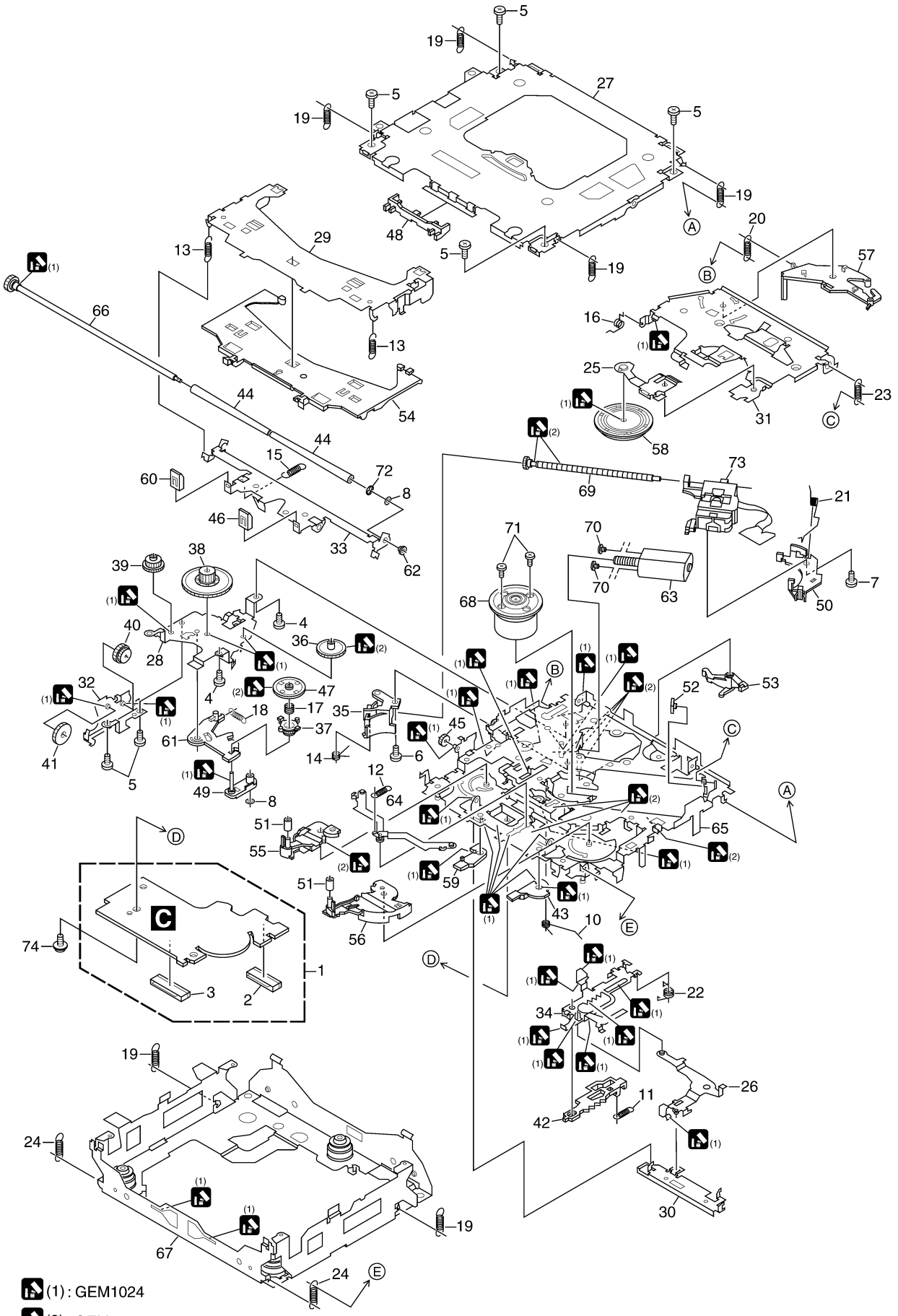
EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BSZ26P060FTC
	2	Screw	BSZ26P100FTC
	3	Screw	BSZ26P180FTC
	4	Cable	CDE8337
	5	Cord Assy	CDP1017
	6	Sheet	CNM9404
	7	Case	CNB2793
	8	Holder	CND3598
	9	Insulator	CNN1385
	10	Panel	CNS8762
	11	Tuner Amp Unit	CWN2131
	12	Screw	BSZ26P060FTC
	13	Screw	BPZ26P080FTC
	14	Screw	BSZ26P160FTC
⚠	15	Fuse(10 A)	CEK1208
	16	Pin Jack(CN351)	CKB1059
	17	Plug(CN901)	CKM1376
	18	Connector(CN651)	CKS3832
	19	Jack(CN1802)	CKN1047
	20	Connector(CN831)	CKS5664
	21	Antenna Jack(CN401)	CKX1056
	22	Holder	CND3545
	23	Holder	CND3754
	24	Holder	CND3706
	25	Heat Sink	CNR1668
	26	FM/AM Tuner Unit	CWE2025
	27	Holder	CND3466
	28	Terminal(CN402)	VNF1084
	29	Terminal(CN601)	VNF1084
	30	Button(DETACH)	CAC4836
	31	Spring	CBH2367
	32	Spring	CBH2961
	33	Spring	CBH2962
	34	Cover	CNN1665
	35	Panel	CNS8760
	36	Arm	CNV9311
	37	Arm	CNV9312
	38	Detach Grille Assy	CXC7319
	39	Screw	BPZ20P100FTC
	40	Button(Detach)	CAC9382
	41	Button(1-6)	CAC9863
	42	Button(<,>,UP,DOWN)	CAC9864
	43	Button(SOURCE,BAND)	CAC9861
	44	Button(AUDIO,FUNC)	CAC9862
	45	Spring	CBH2210
	46	Cover	CNS8744
	47	LCD	CAW1931
	48	Connector(CN1801)	CKS5663
	49	Holder	CND3642
	50	Lighting Conductor	CNV9301
	51	Rubber	CNV9302
	52	Connector	CNV9306
	53	Grille Unit	CXC7052
	54	Knob Unit(VOLUME)	CXC7059
	55	Spring	CBL1761
	56	Chassis Unit	CXC7391
	57	CD Mechanism Module(S10.5)	CXK5700
	58	Screw	ISS26P055FTC
	59	Transistor(Q991)	2SD2396
	60	IC(IC301)	PAL007C
	61	IC(IC911)	BA4918-V12

2.3 CD MECHANISM MODULE

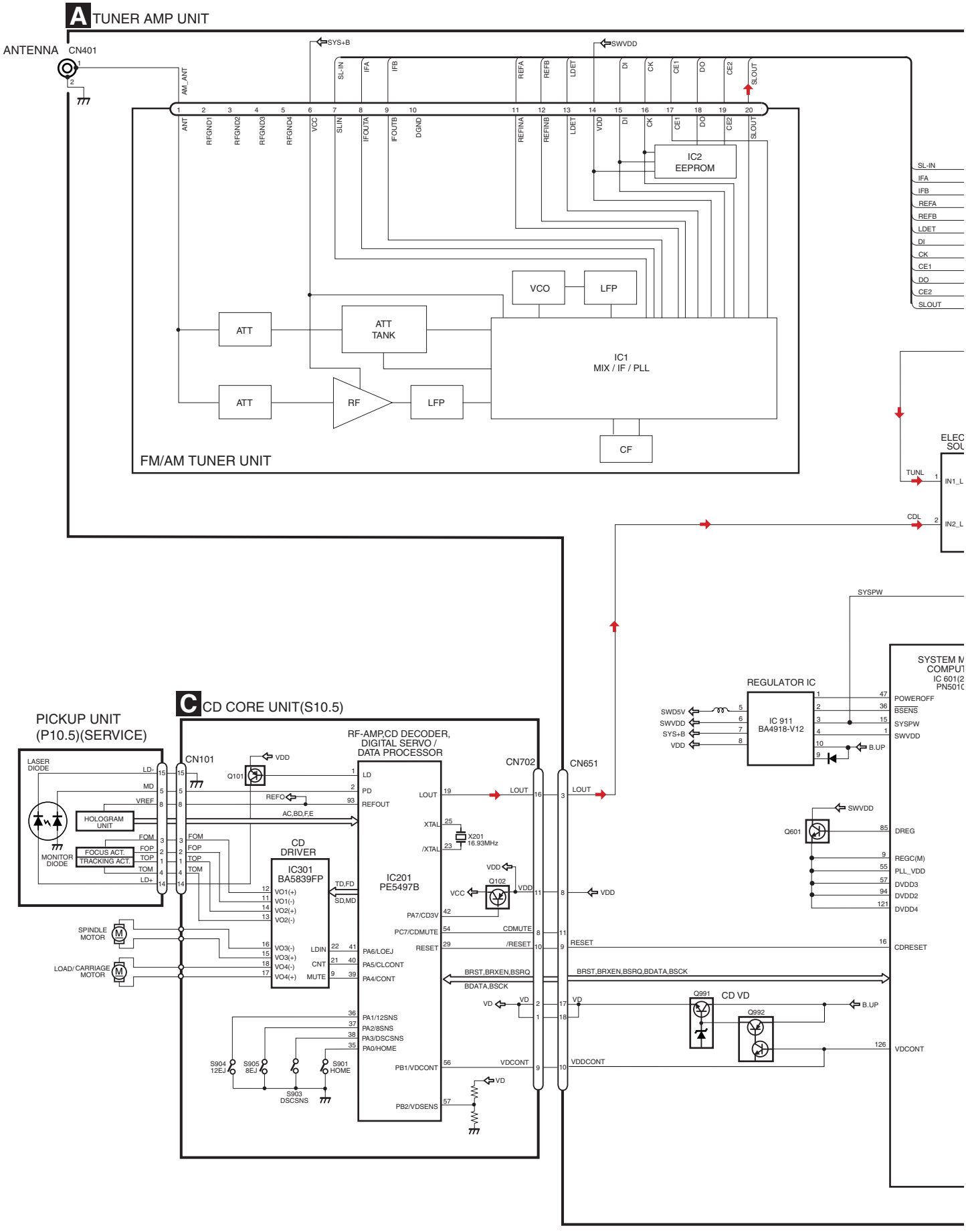


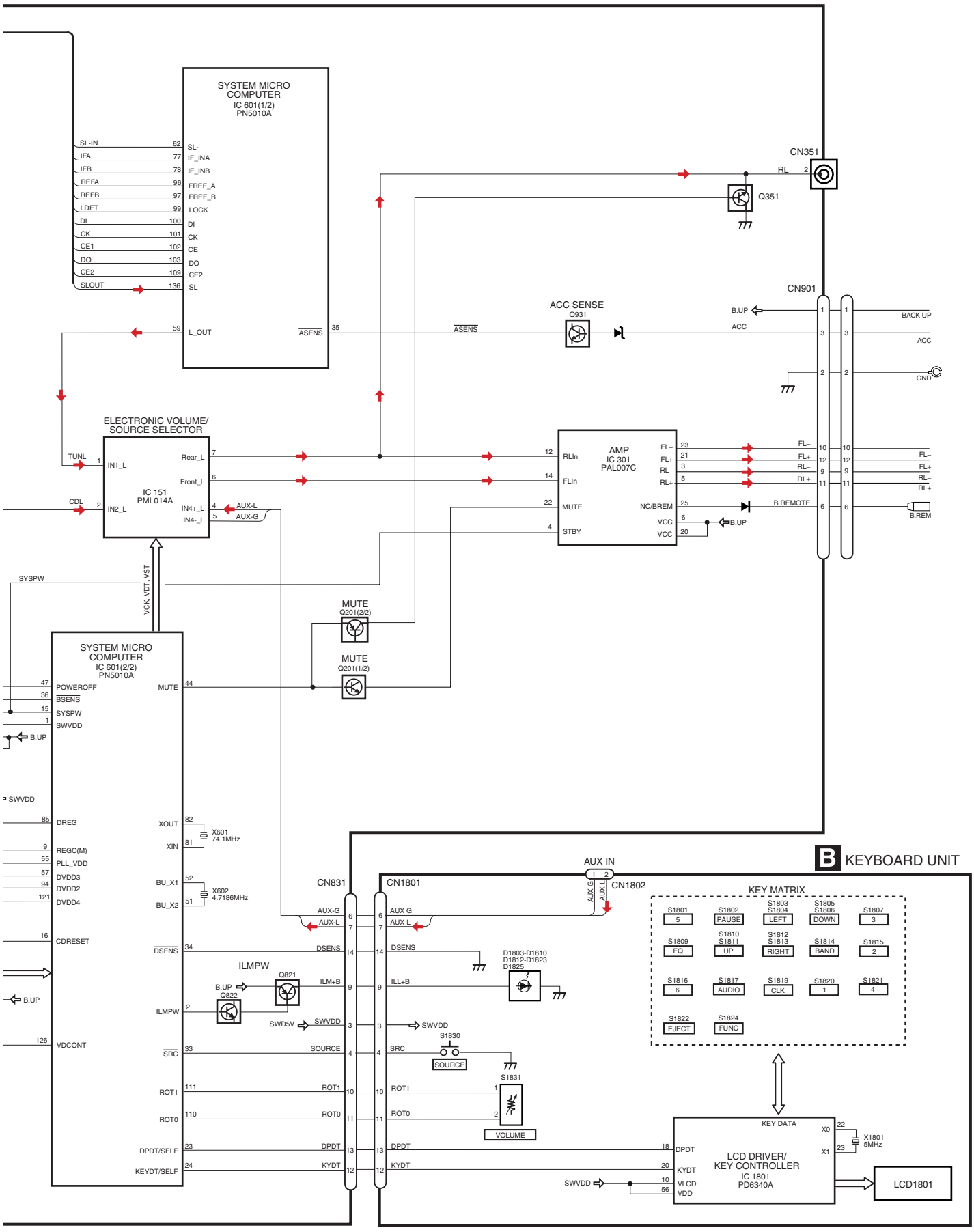
CD MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.
1	CD Core Unit(S10.5)	CWX3090
2	Connector(CN101)	CKS4808
3	Connector(CN702)	CKS5283
4	Screw	BMZ20P025FTC
5	Screw	BSZ20P040FTC
6	Screw(M2 x 3)	CBA1511
7	Screw(M2 x 4)	CBA1835
8	Washer	CBF1038
9	•••••	
10	Spring	CBH2609
11	Spring	CBH2612
12	Spring	CBH2614
13	Spring	CBH2616
14	Spring	CBH2617
15	Spring	CBH2620
16	Spring	CBH2855
17	Spring	CBH2937
18	Spring	CBH2735
19	Spring	CBH2854
20	Spring	CBH2642
21	Spring	CBH2856
22	Spring	CBH2857
23	Spring	CBH2860
24	Spring	CBH2861
25	Spring	CBL1686
26	Arm	CND1909
27	Frame	CND2582
28	Bracket	CND2583
29	Arm	CND2584
30	Lever	CND2585
31	Arm	CND2586
32	Bracket	CND2587
33	Arm	CND2588
34	Lever	CND2589
35	Holder	CNV7201
36	Gear	CNV7207
37	Gear	CNV7208
38	Gear	CNV7209
39	Gear	CNV7210
40	Gear	CNV7211
41	Gear	CNV7212
42	Rack	CNV7214
43	Arm	CNV7216
44	Roller	CNV8189
45	Gear	CNV7219
46	Guide	CNV7361
47	Gear	CNV7595
48	Guide	CNV8448
49	Arm	CNV7805
50	Rack	CNV8342
51	Roller	CNV8343
52	Holder	CNV8344
53	Arm	CNV8345
54	Guide	CNV8347
55	Arm	CNV8348
56	Arm	CNV8349
57	Arm	CNV8350
58	Clamper	CNV8365
59	Arm	CNV8386
60	Guide	CNV8396
61	Arm	CNV8413
62	Collar	CNV8447
63	Motor Unit(M2)	CXC4026
64	Arm Unit	CXC4027
65	Chassis Unit	CXC4028
66	Gear Unit	CXC4029
67	Frame Unit	CXC4031
68	Motor Unit(M1)	CXC7134
69	Screw Unit	CXC6359
70	Screw	JFZ20P020FTC
71	Screw	JGZ17P022FTC
72	Washer	YE20FTC
73	Pickup Unit(P10.5)(Service)	CXX1942
74	Screw	IMS26P030FTC

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

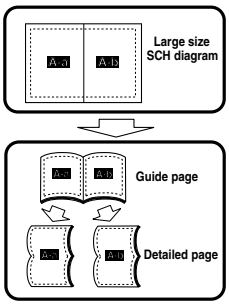
3.1 BLOCK DIAGRAM




SYSTEM MICRO COMPUTER
IC 601(1/2)
PN5010A
SL-IN 62
IFA 77
IFB 78
REFA 96
REFB 97
LDET 99
DI 100
CK 101
CE1 102
DO 103
CE2 109
SLOUT 136
SL-
IF_INA
IF_INB
FREF_A
FREF_B
LOCK
DI
CK
CE
DO
CE2
SL
59 L_OUT
ASENS 35
CN351
RL 2
Q351
CN901
ACC SENSE
Q931
B.UP
ACC
BACK UP
GND
ELECTRONIC VOLUME/
SOURCE SELECTOR
IC 151
PML014A
TUNL 1
CDL 2
IN1_L
IN2_L
Rear_L 7
Front_L 6
IN4+_L 4
IN4-_L 5
AUX-L
AUX-G
AMP
IC 301
PAL007C
RLIn 12
FLIn 14
MUTE 22
STBY 4
FL– 23
FL+ 21
RL– 3
RL+ 5
NC/BREM 25
VCC 6
VCC 20
B.REMOTE
B.REM
SYSPW
VCK_VDT_VST
MUTE
Q201(2/2)
Q201(1/2)
SYSTEM MICRO COMPUTER
IC 601(2/2)
PN5010A
47 POWEROFF
36 BSENS
15 SYSPW
1 SWVDD
MUTE 44
SWVDD
85 DREG
9 REGC(M)
55 PLL_VDD
57 DVDD3
94 DVDD2
121 DVDD4
16 CDRESET
126 VDCONT
XOUT 82
XIN 81
X601
74.1MHz
BU_X1 52
BU_X2 51
X602
4.7186MHz
DSENS 34
ILMPW 2
SRC 33
ROT1 111
ROT0 110
DPDT/SELF 23
KEYDT/SELF 24
CN831
CN1801
CN1802
AUX IN
AUX G
AUX L
DSENS
ILL+B
SWVDD
SOURCE
ROT1
ROT0
DPDT
KYDT
ILMPW
Q821
Q822
ILM+B
SWD5V
S1830
SOURCE
S1831
VOLUME
D1803-D1810
D1812-D1823
D1825
B KEYBOARD UNIT
KEY MATRIX
S1801 5
S1802 PAUSE
S1803 S1804 LEFT
S1805 S1806 DOWN
S1807 3
S1809 EQ
S1810 S1811 UP
S1812 S1813 RIGHT
S1814 BAND
S1815 2
S1816 6
S1817 AUDIO
S1819 CLK
S1820 1
S1821 4
S1822 EJECT
S1824 FUNC
KEY DATA
LCD DRIVER/
KEY CONTROLLER
IC 1801
PD6340A
X1801
5MHz
LCD1801
SWVDD
VLCD
VDD

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A-a

C CN702

CN651

CD VD

CD

CD MECHA S10.5STD

B. UP

SYS+B

VDD

SWVDD

FM/AM TUNER UNIT

Z401

CN401

CN402

TUNER

IC601

PN5010A

SYSTEM CONTROLLER

CN831

B

CN1801

GRILL

NOTE :

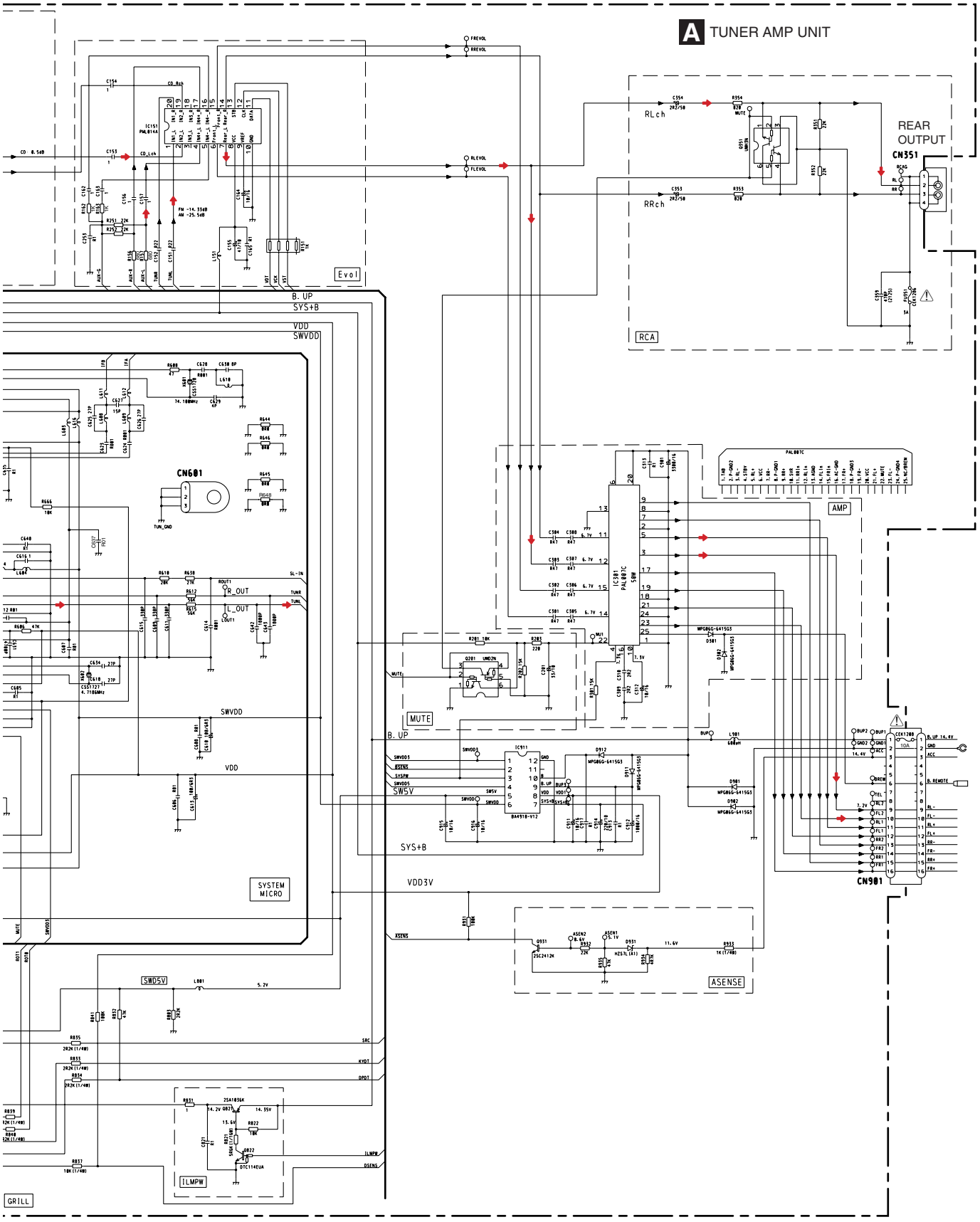
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

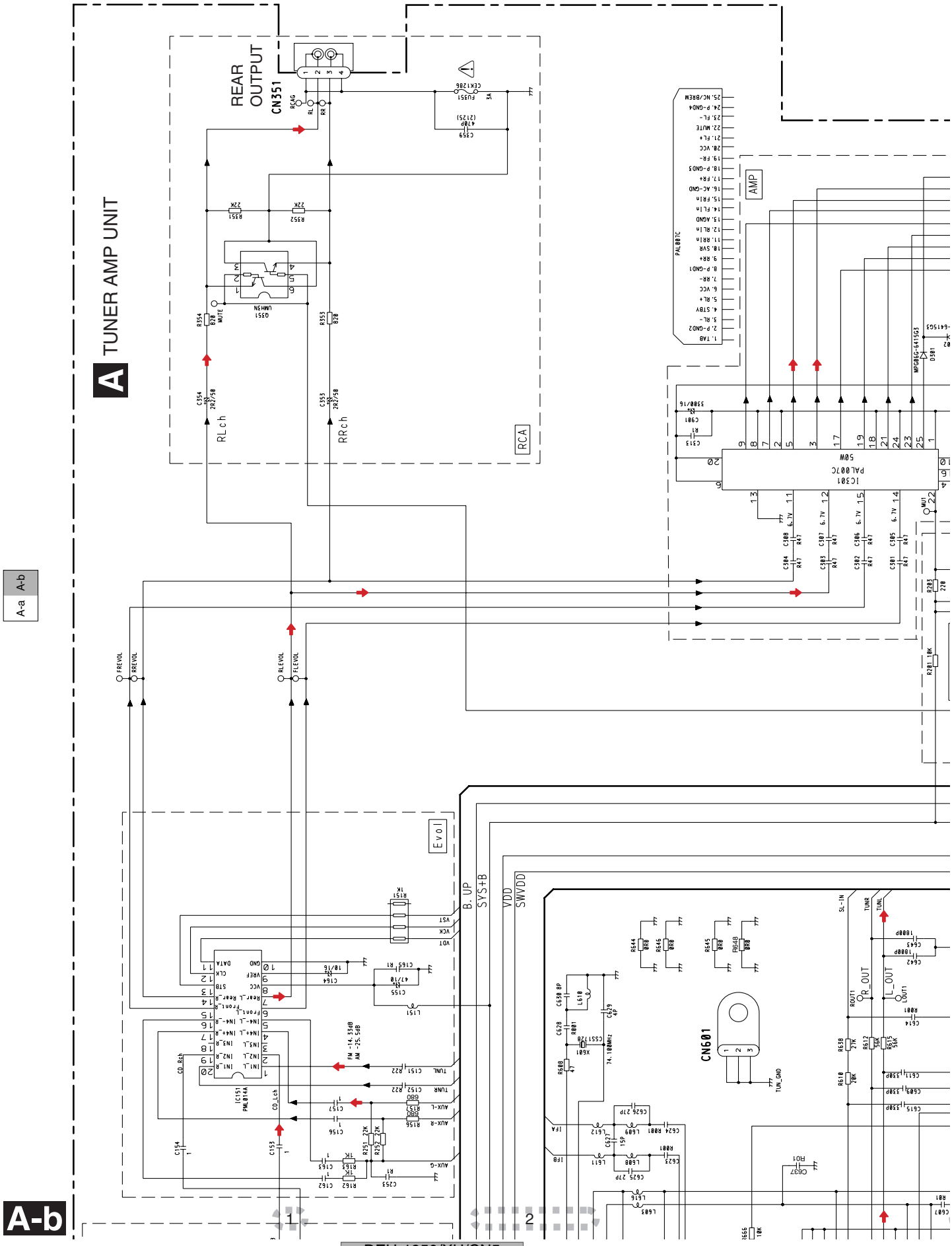
Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

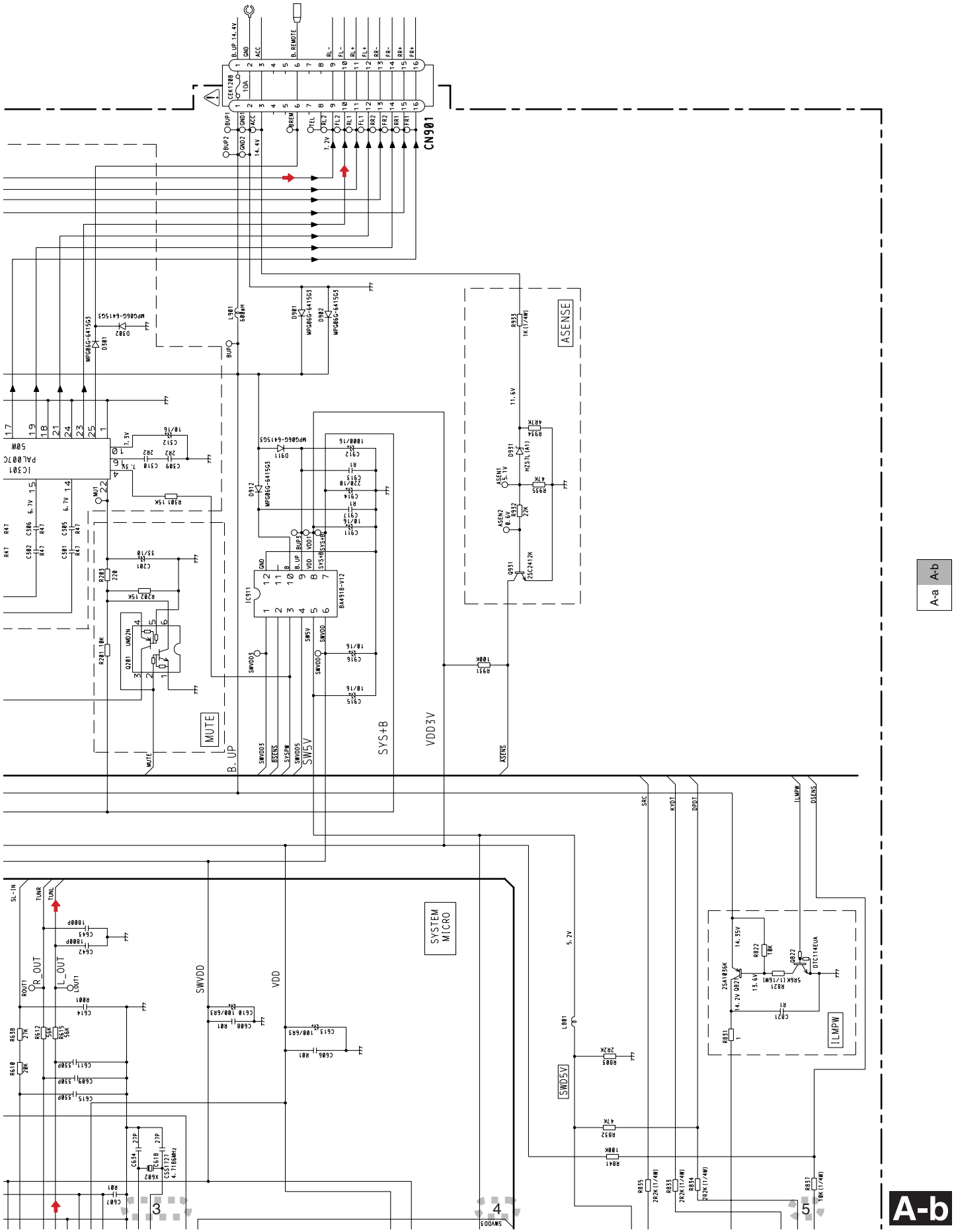
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

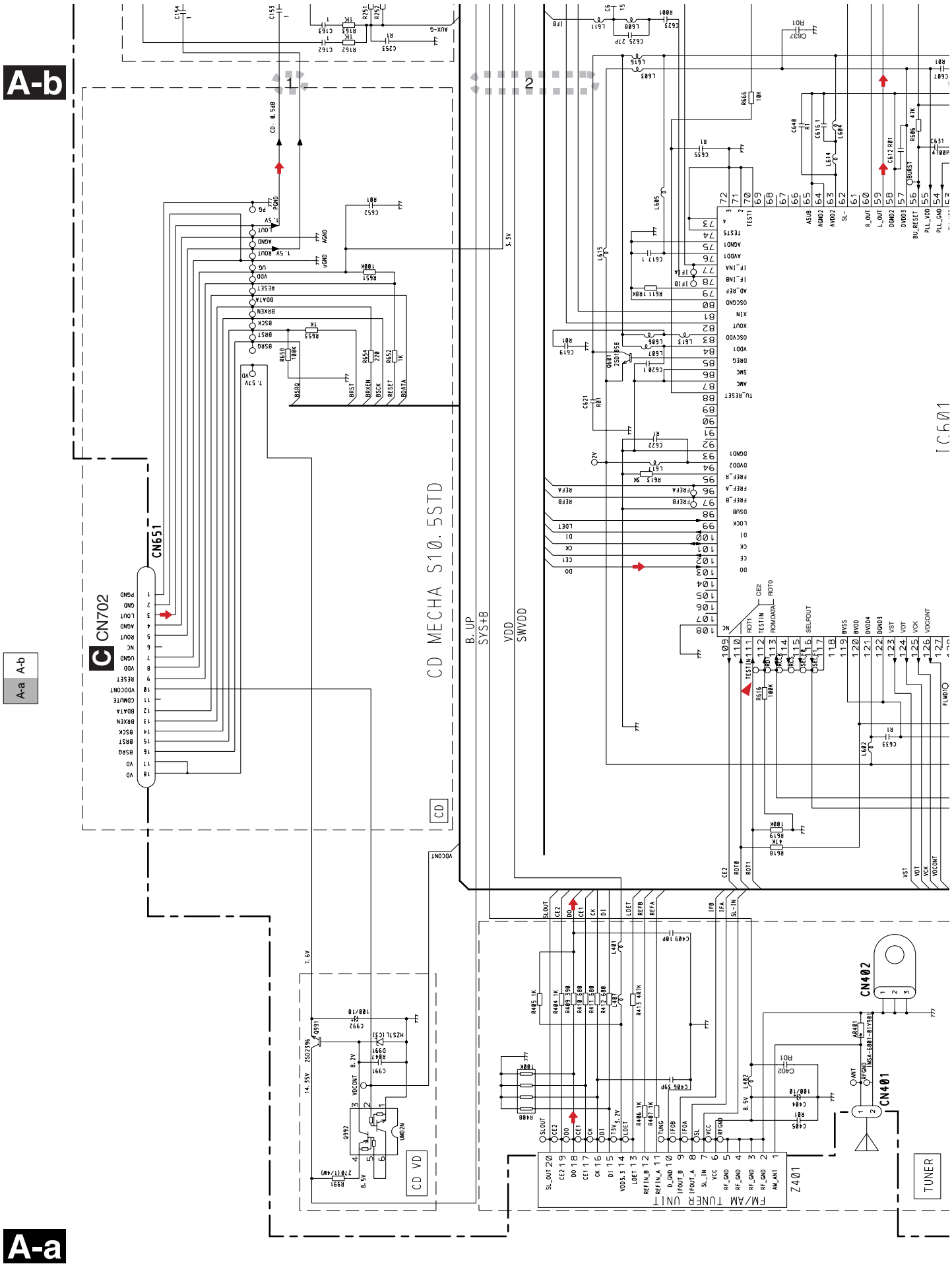
A

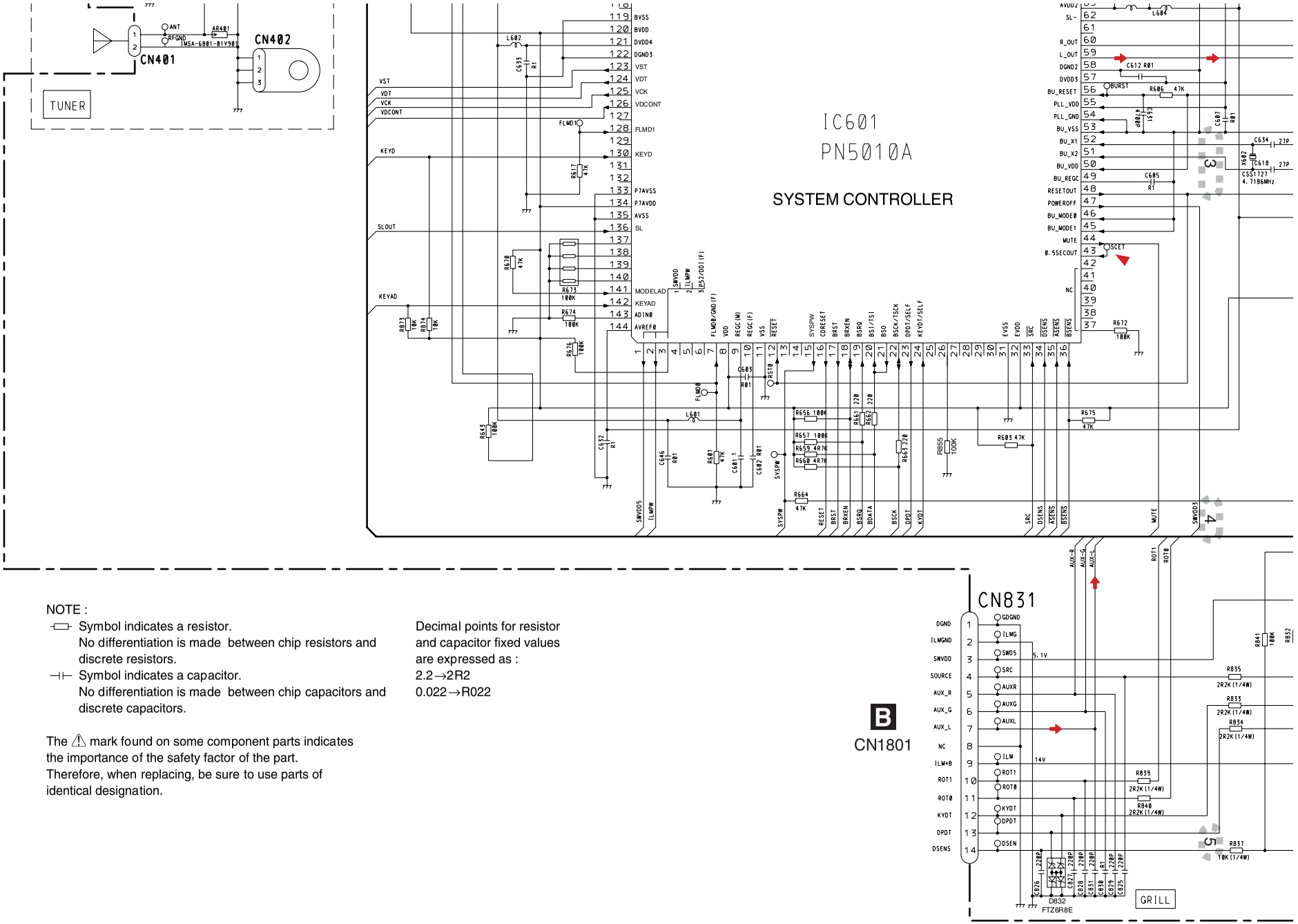
A-b


A TUNER AMP UNIT
REAR OUTPUT
CN351
RCA
RLch
RRch
FREVOL
RREVOL
RLEVOL
FLEVOL
Evol
B. UP
SYS+B
VDD
SWVDD
CN601
TUN_GND
R_OUT
L_OUT
SL-IN
TUNR
TUNL
SWVDD
VDD
SYSTEM MICRO
AMP
IC581 PAL007C
MUTE
SW5V
SYS+B
VDD3V
IC911
BA4918-V12
CN901
ASENSE
SWD5V
5.2V
SRC
KYDT
DPDT
ILMPW
DSENS
GRILL


A TUNER AMP UNIT
REAR OUTPUT
CN351
RCA
RL ch
RR ch
AMP
IC301
PAL007C
50W
Evol
CN601
A-b
A-a
A-b
1
2


CN901
B. UP 14.4V
GND
ACC
B. REMOTE
BUP1
BUP2
GND1
GND2
ACC
14.4V
BREM
TEL
RL2
FL2
RL1
FL1
RR2
FR2
RR1
FR1
7.2V
CEK1208
10A
ASENSE
MUTE
B. UP
SW5V
SYS+B
VDD3V
SYSTEM MICRO
SWVDD
VDD
SW05V
L_OUT
R_OUT
SL-IN
TUNR
TUNL
ILMPW
DSENS
SRC
KYDT
DPDT
IC301
PAL007C
50W
IC911
BA4918-V12
Q201
UMD2N
Q931
2SC4213K
D931
HZS7L(A1)
Q822
DTC114EUA
2SA1036K
X602
CSS(1227)
4.7186MHz
11.6V
5.2V
14.55V
13.6V
14.2V
11.5V
7.5V
6.7V
3.3V
5.1V
8.6V
2.2V
1.5V
0.7V
SWVDD3
BSENS
SYSPW
SWVDD5
SWVDD4
ASENS
MUTE
ASEN1
ASEN2


A-b
A-a
CD MECHA S10.5STD
CN651
CN702
CN402
CN401
IC601
Z401
TUNER
CD VD
FM/AM TUNER UNIT
B.UP
SYS+B
VDD
SWVDD
3.3V
8.5V
7.6V
14.35V



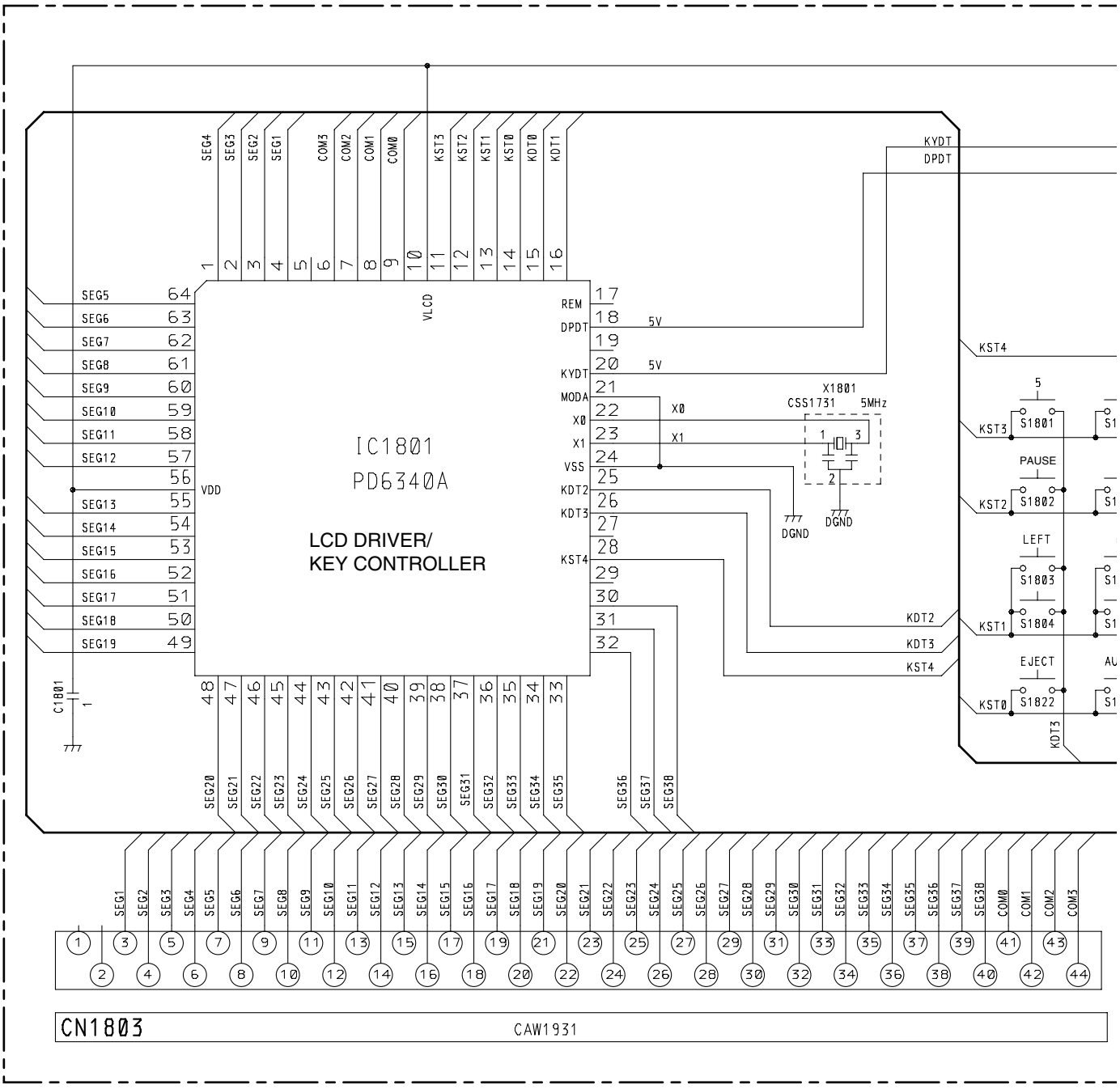
NOTE :

- ⊣⊢ Symbol indicates a resistor.
  No differentiation is made between chip resistors and discrete resistors.
- ⊣⊢ Symbol indicates a capacitor.
  No differentiation is made between chip capacitors and discrete capacitors.

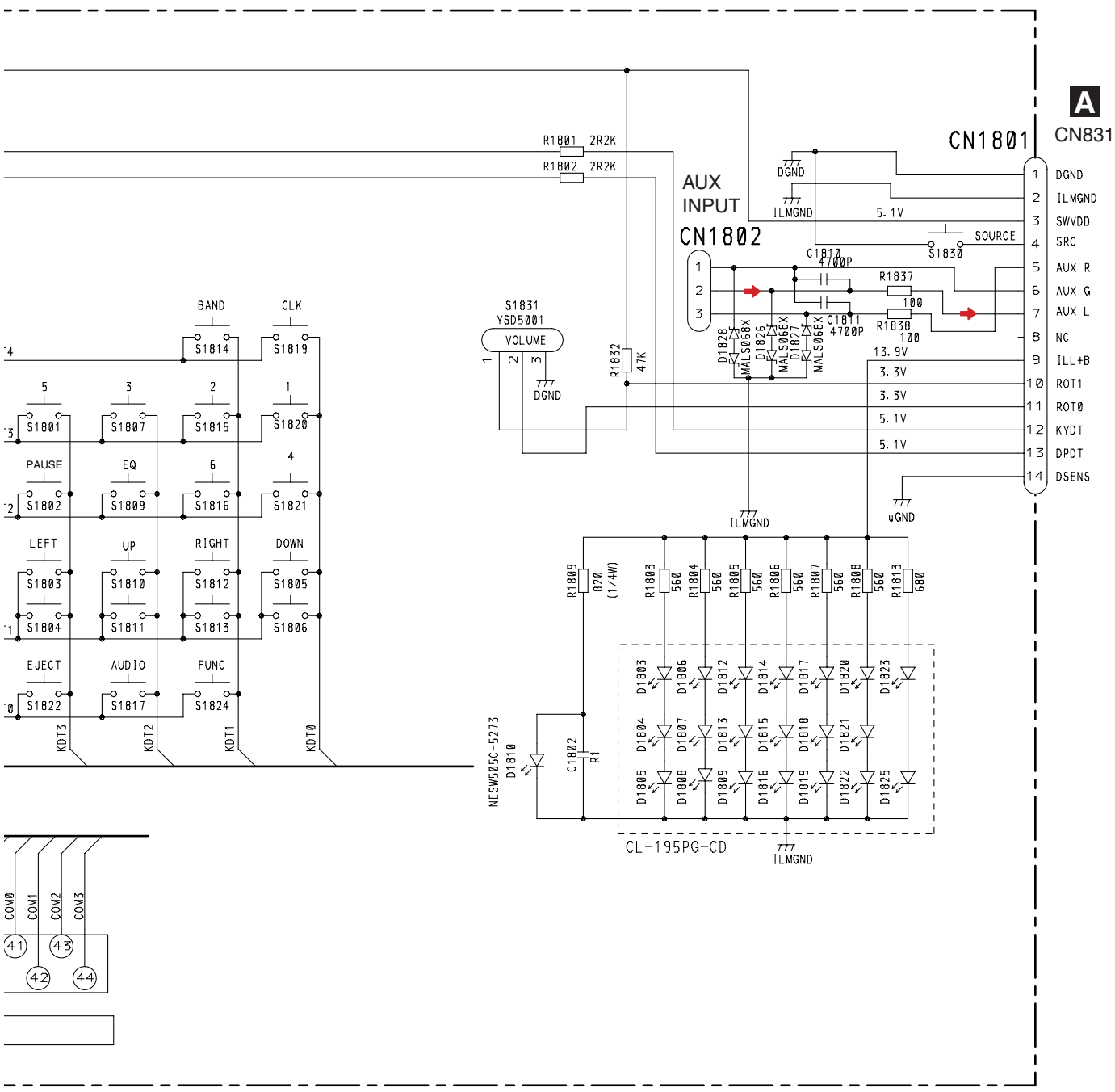
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

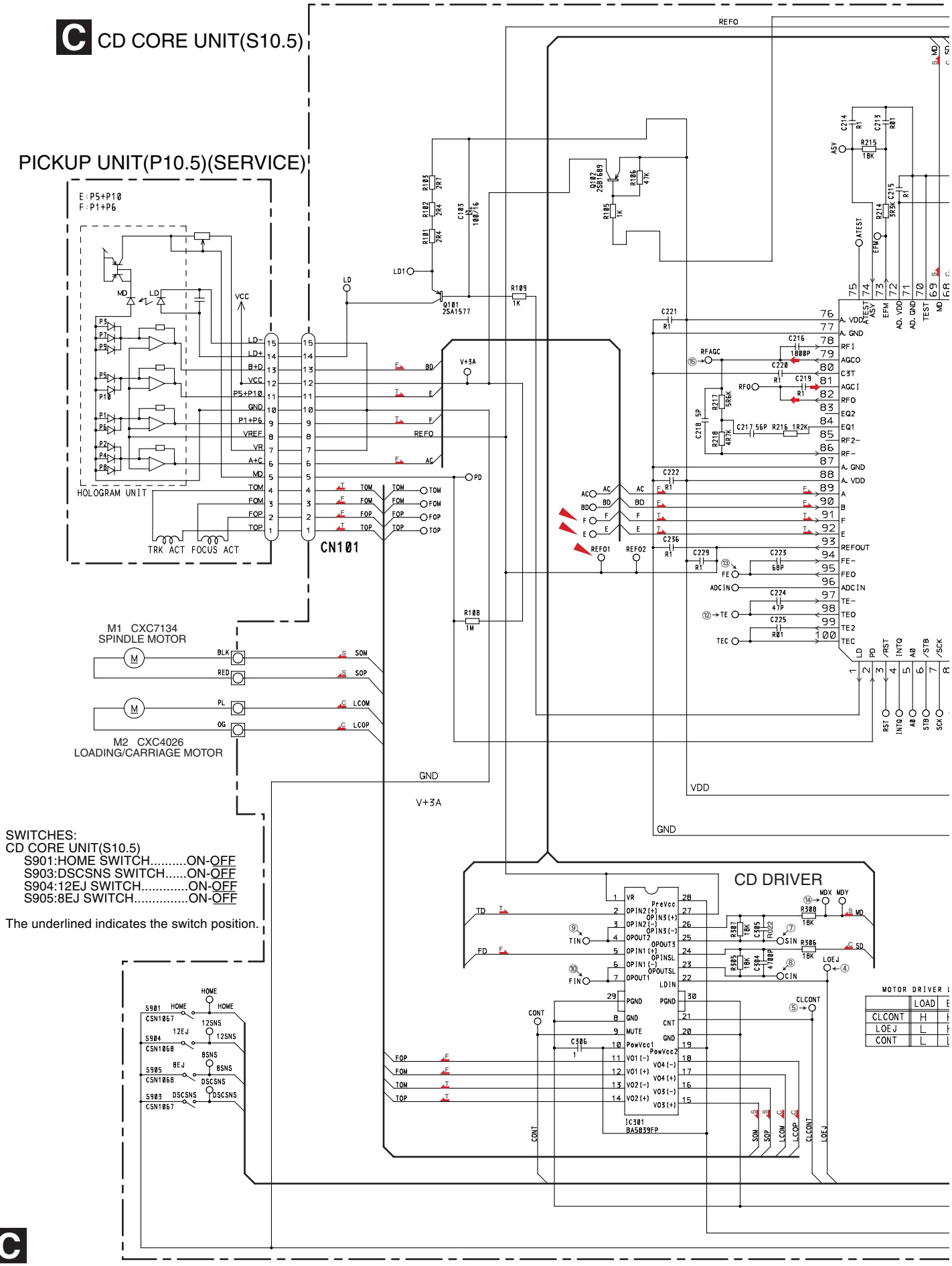
3.3 KEYBOARD UNIT

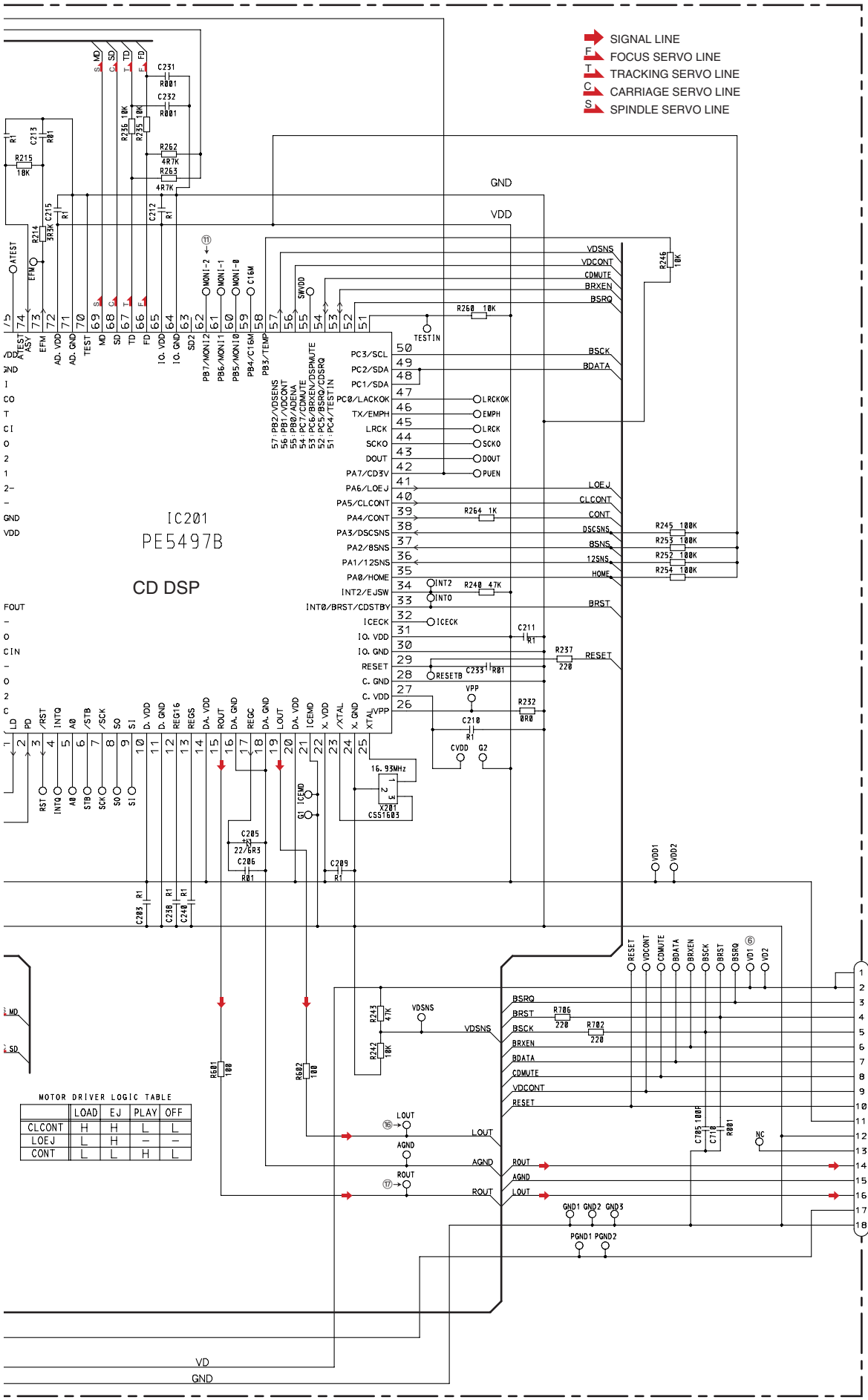


B KEYBOARD UNIT



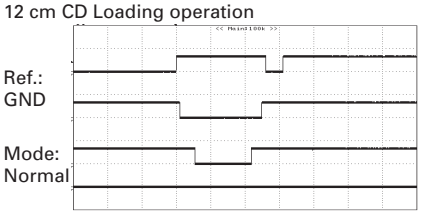
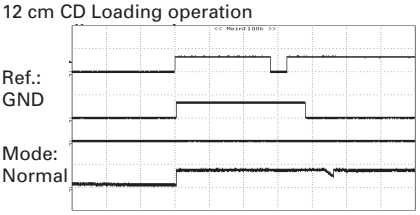
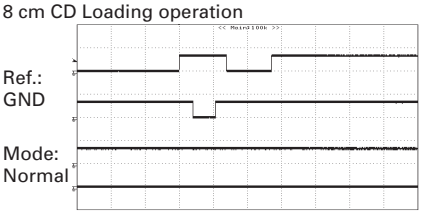
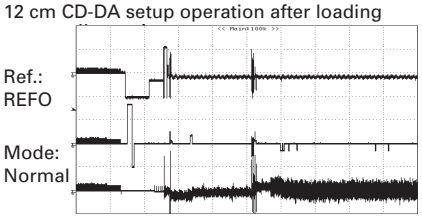
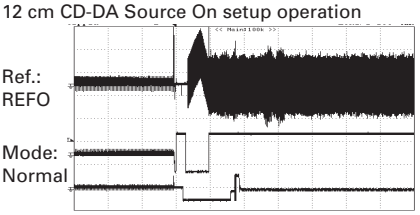
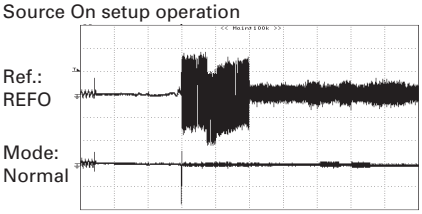
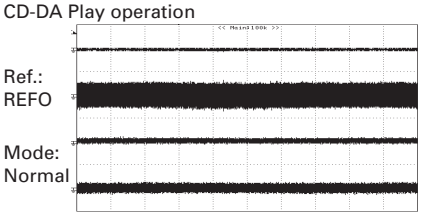
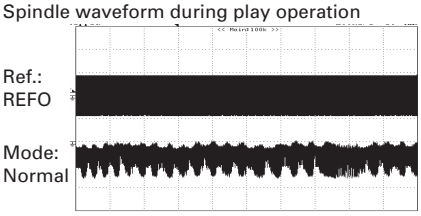
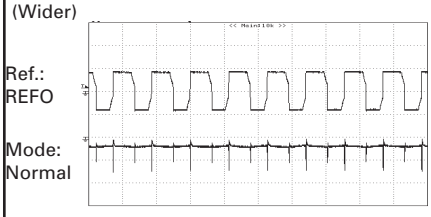
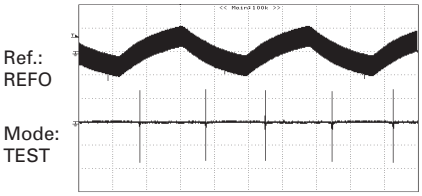
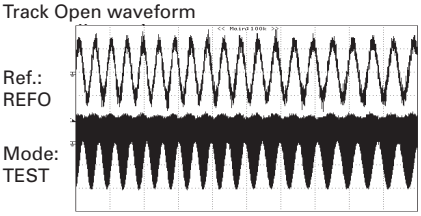
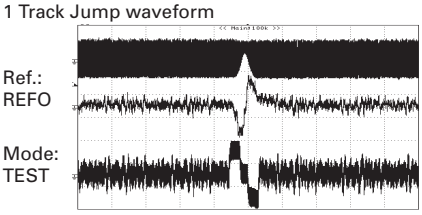
3.4 CD MECHANISM MODULE




SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE
IC201
PE5497B
CD DSP
GND
VDD
VDSNS
VDCONT
CDMUTE
BRXEN
BSRQ
BSCK
BDATA
LRCKOK
EMPH
LRCK
SCKO
DOUT
PUEN
LOEJ
CLCONT
CONT
DSCSNS
BSNS
12SNS
HOME
BRST
RESET
VPP
ICECK
TESTIN
16.93MHz
X201
CSS1603
MOTOR DRIVER LOGIC TABLE
LOAD EJ PLAY OFF
CLCONT H H L L
LOEJ L H – –
CONT L L H L
CN702
Aout
CN651
VD
GND

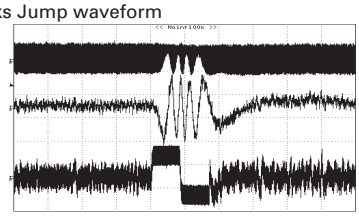
● Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65 V)

① DSCSNS 5 V/div 500 ms/div ② 8SNS 5 V/div ③ 12SNS 5 V/div ④ LOEJ 5 V/div 12 cm CD Loading operation  	① DSCSNS 5 V/div 500 ms/div ⑤ CLCONT 5 V/div ④ LOEJ 5 V/div ⑥ VD 10 V/div 12 cm CD Loading operation  	① DSCSNS 5 V/div 500 ms/div ② 8SNS 5 V/div ③ 12SNS 5 V/div ④ LOEJ 5 V/div 8 cm CD Loading operation 
⑦ SIN 1 V/div 2 s/div ⑧ CIN 500 mV/div ⑨ TIN 500 mV/div 12 cm CD-DA setup operation after loading  	⑩ FIN 200 mV/div 500 ms/div ⑪ RFOK (MONI_2) 2 V/div ⑦ SIN 2 V/div 12 cm CD-DA Source On setup operation  	⑫ TE 500 mV/div 200 ms/div ⑬ FE 500 mV/div Source On setup operation 
⑬ FE 500 mV/div 20 ms/div ⑩ FIN 500 mV/div ⑫ TE 500 mV/div ⑨ TIN 500 mV/div CD-DA Play operation  	⑭ MDX 2 V/div 50 ms/div ⑦ SIN 500 mV/div Spindle waveform during play operation  	⑭ MDX 2 V/div 5 µs/div ⑦ SIN 500 mV/div Spindle waveform during play operation (Wider) 
⑩ FIN 500 mV/div 200 ms/div ⑬ FE 500 mV/div Focus Search waveform  	⑫ TE 500 mV/div 2 ms/div ⑮ RFAGC 500 mV/div Track Open waveform  	⑮ RFAGC 1 V/div 500 µs/div ⑫ TE 500 mV/div ⑨ TIN 500 mV/div 1 Track Jump waveform 

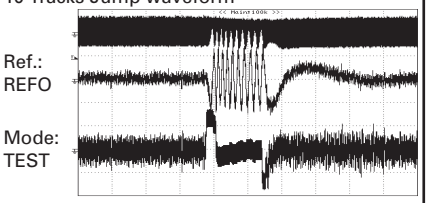
⑮ RFAGC	1 V/div	500 µs/div
⑫ TE	500 mV/div	
⑨ TIN	500 mV/div	

4 Tracks Jump waveform



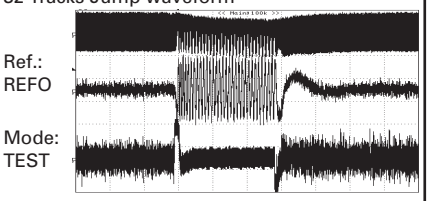
⑮ RFAGC	1 V/div	1 ms/div
⑫ TE	500 mV/div	
⑨ TIN	500 mV/div	

10 Tracks Jump waveform



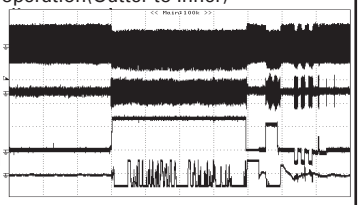
⑮ RFAGC	1 V/div	2 ms/div
⑫ TE	500 mV/div	
⑨ TIN	500 mV/div	

32 Tracks Jump waveform



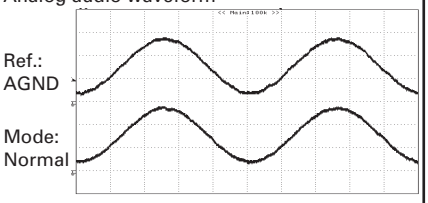
⑮ RFAGC	1 V/div	200 ms/div
⑫ TE	1 V/div	
⑧ CIN	500 mV/div	
⑦ SIN	2 V/div	

Search operation(Outter to Inner)



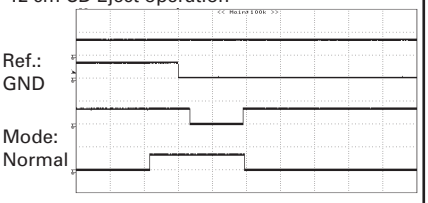
⑯ LOUT	1 V/div	200 µs/div
⑰ ROUT	1 V/div	

Analog audio waveform



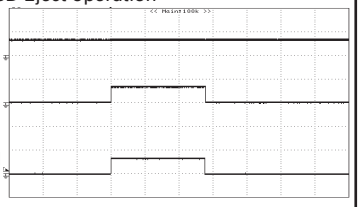
① DSCSNS	5 V/div	500 ms/div
② 8SNS	5 V/div	
③ 12SNS	5 V/div	
④ LOEJ	5 V/div	

12 cm CD Eject operation



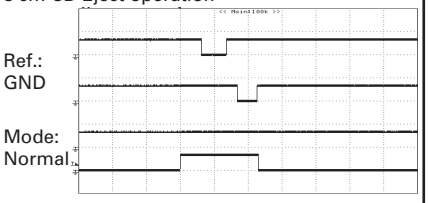
① DSCSNS	5 V/div	500 ms/div
⑤ CLCONT	5 V/div	
④ LOEJ	5 V/div	

12 cm CD Eject operation



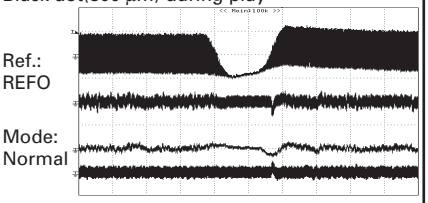
① DSCSNS	5 V/div	500 ms/div
② 8SNS	5 V/div	
③ 12SNS	5 V/div	
④ LOEJ	5 V/div	

8 cm CD Eject operation



⑮ RFAGC	1 V/div	500 µs/div
⑨ TIN	1 V/div	
⑫ TE	1 V/div	
⑩ FIN	1 V/div	

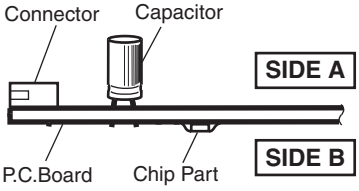
Black dot(800 µm) during play



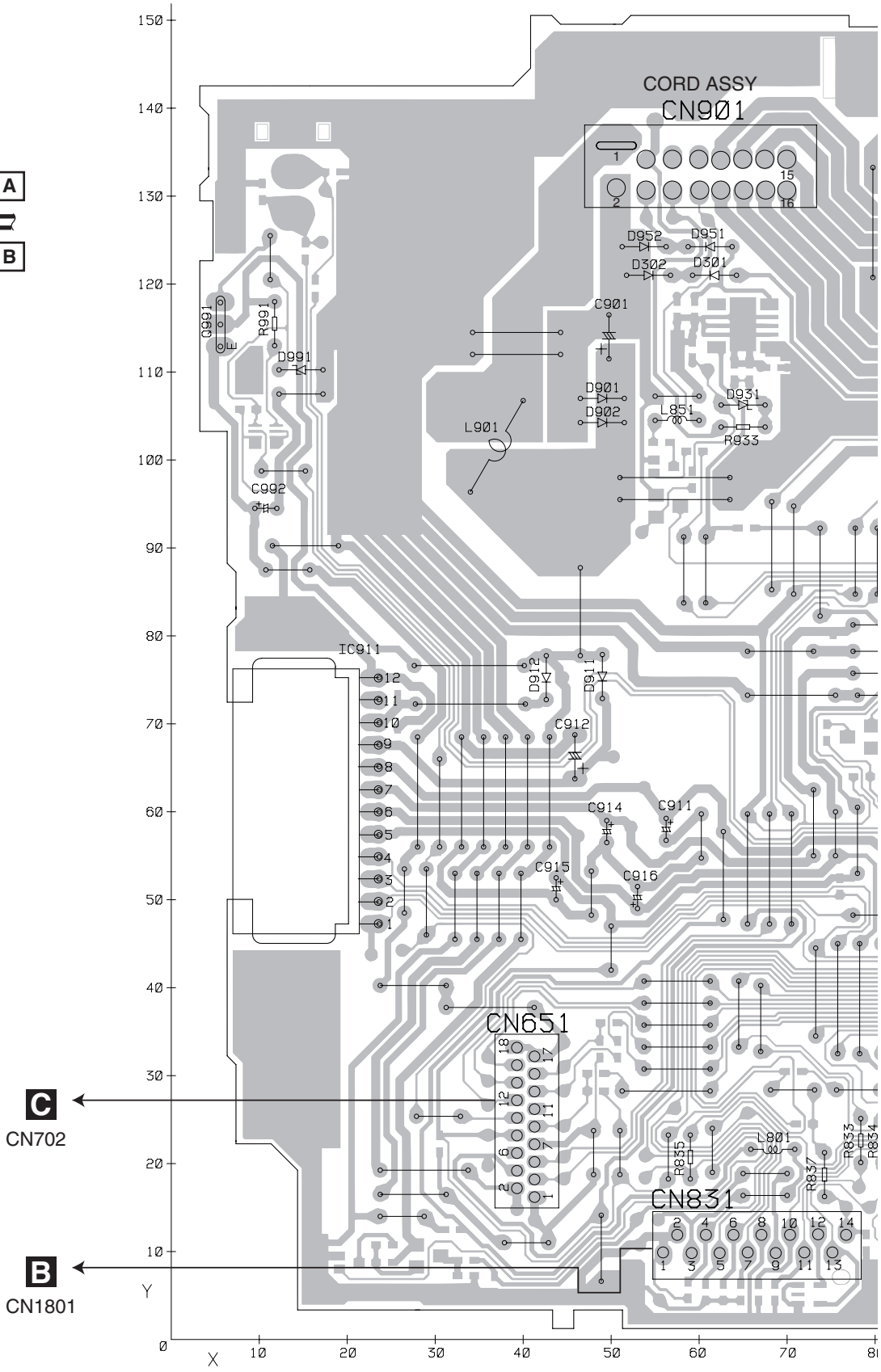
4. PCB CONNECTION DIAGRAM
4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

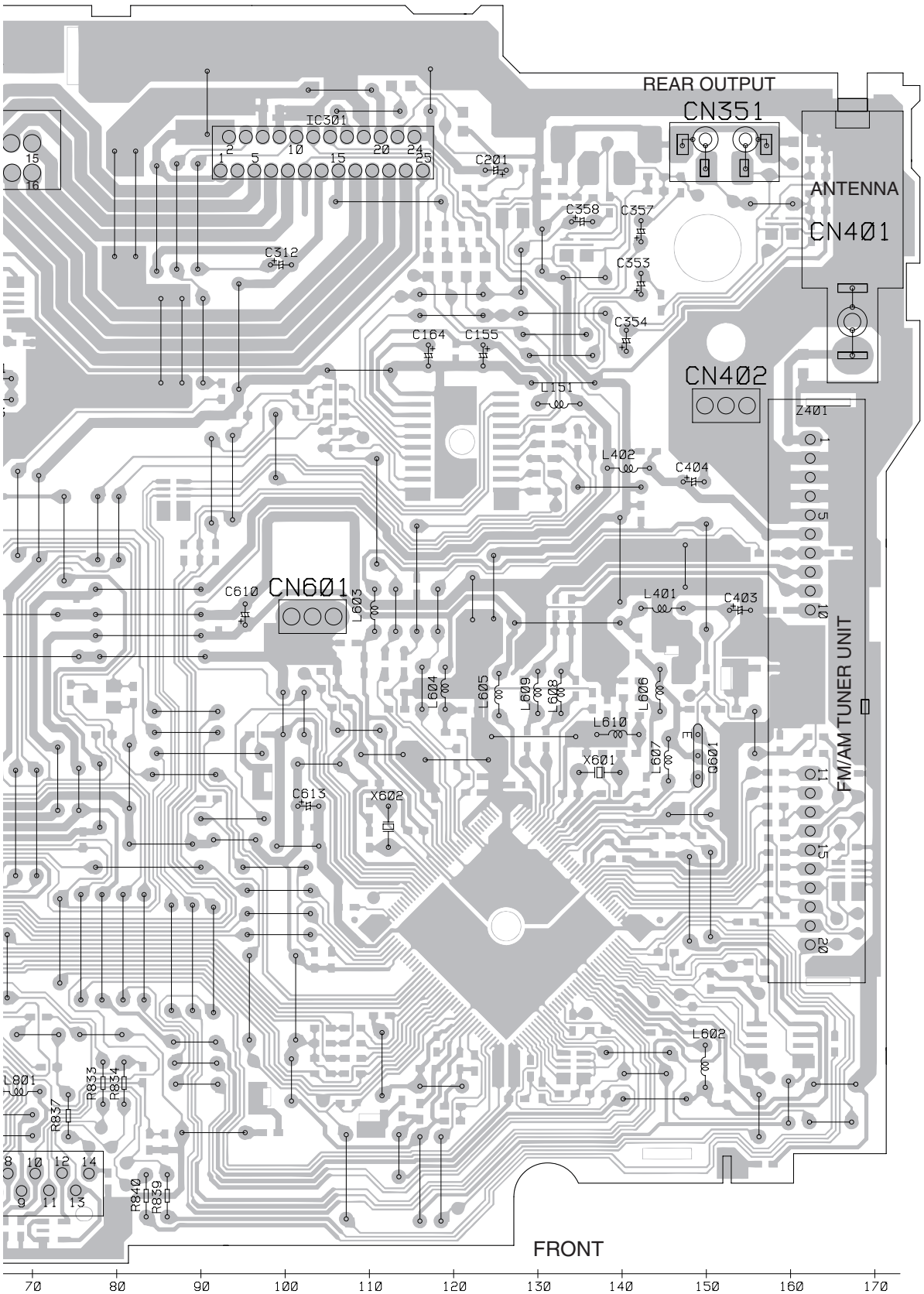
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



A TUNER AMP UNIT



SIDE A



A

DEH-1950/XU/CN5

A

B

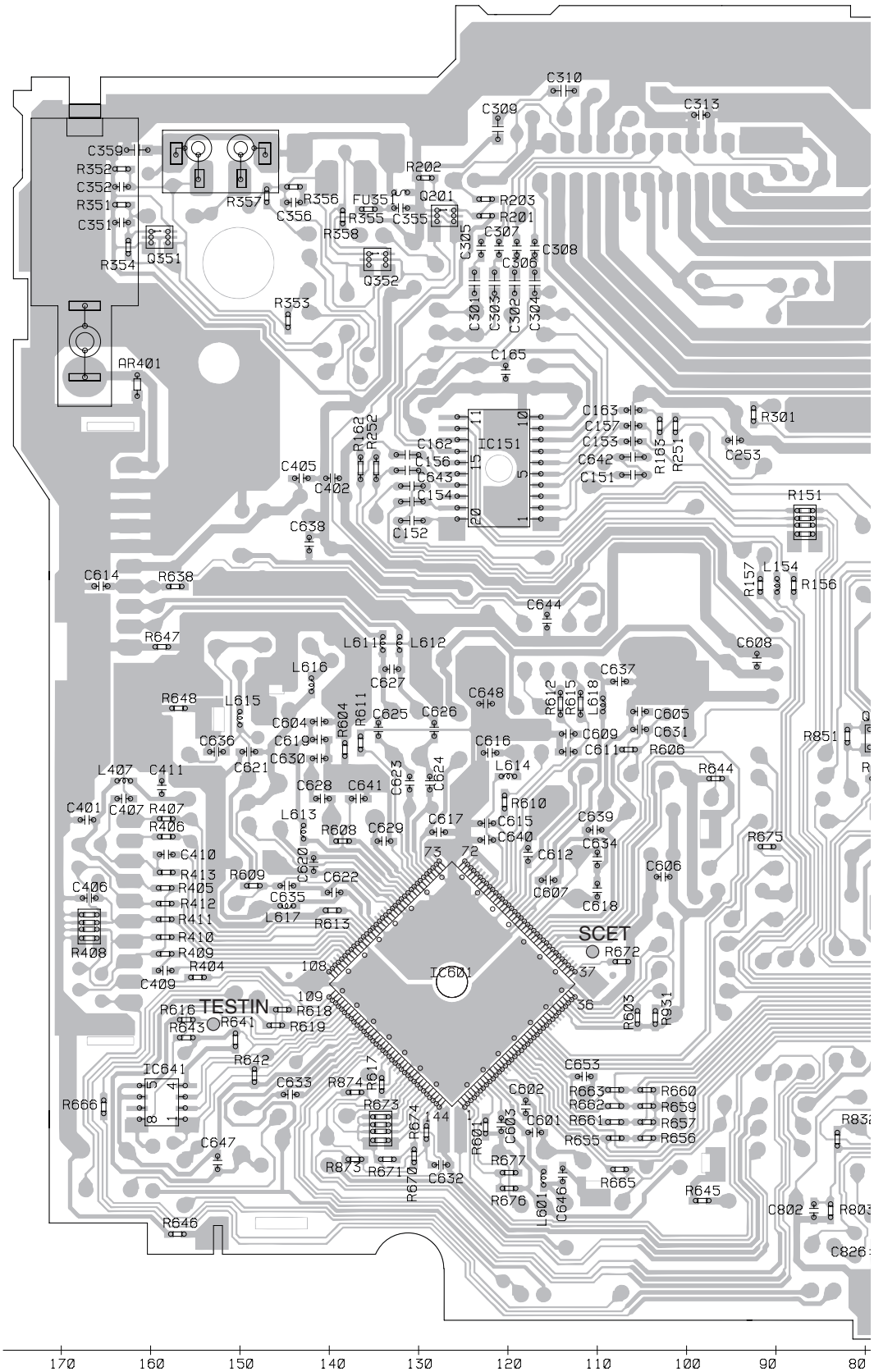
C

D

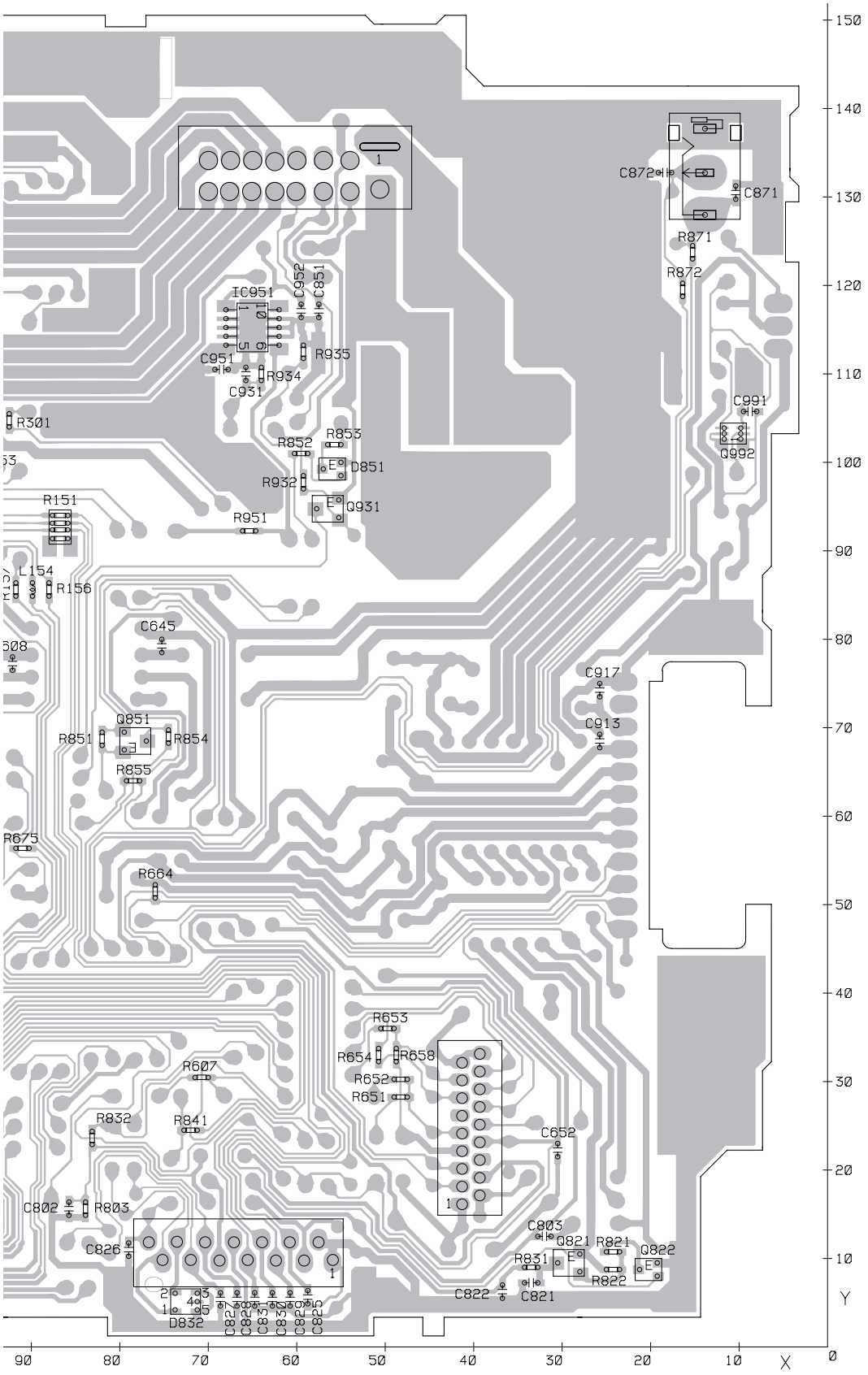
E

F

A TUNER AMP UNIT

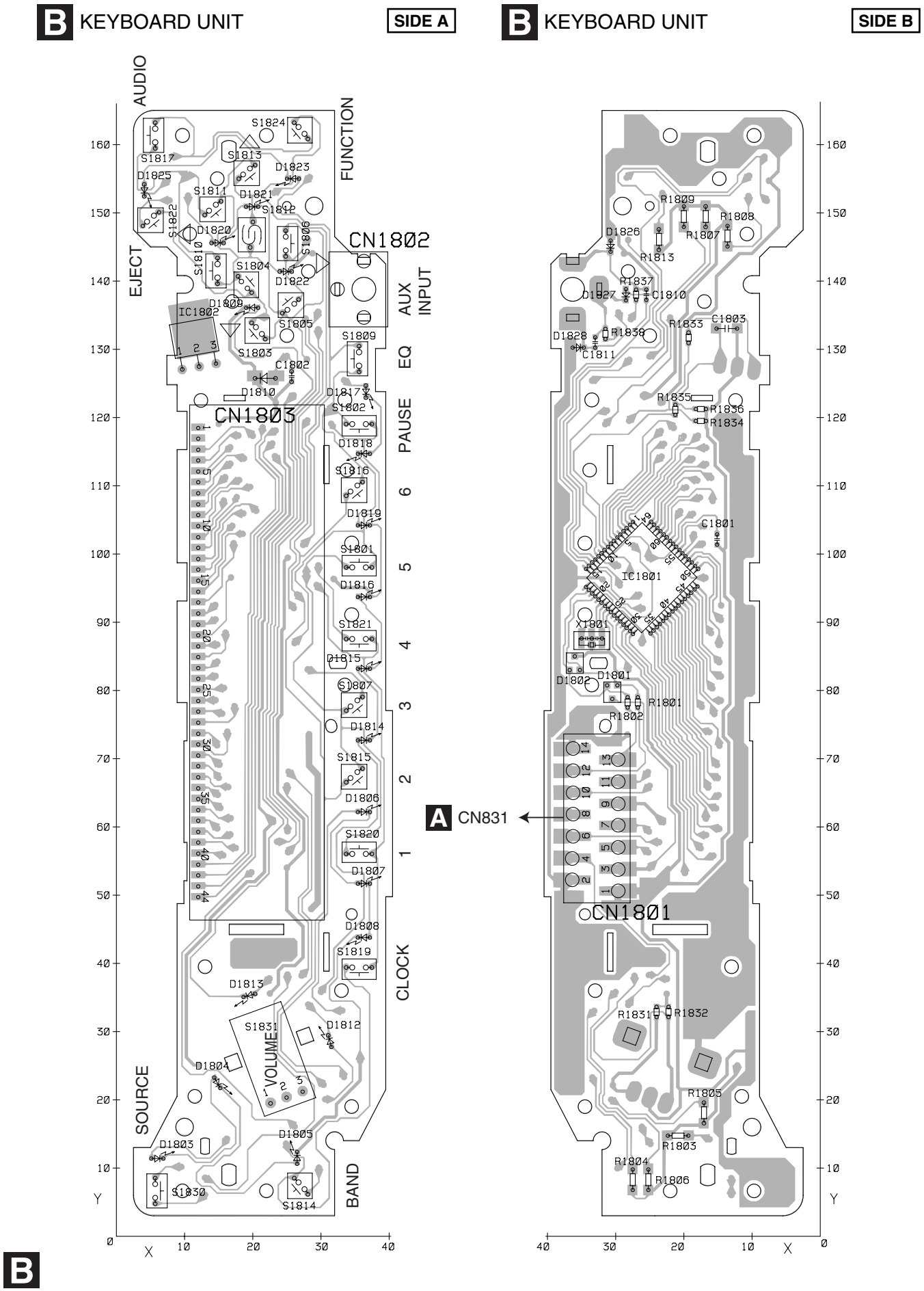


SIDE B


C872
C871
R871
R872
IC951
C952
C851
C951
R935
R934
C951
C991
Q992
R301
R852
R853
D851
R932
Q931
R951
R151
L154
R156
C645
C917
C913
Q851
R851
R854
R855
R675
R664
R653
R654
R658
R652
R651
R607
R832
R841
C652
C802
R803
C826
C803
Q821
R821
Q822
R831
R822
C822
C821
D832
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
X
Y

A

4.2 KEYBOARD UNIT



A

B

C

D

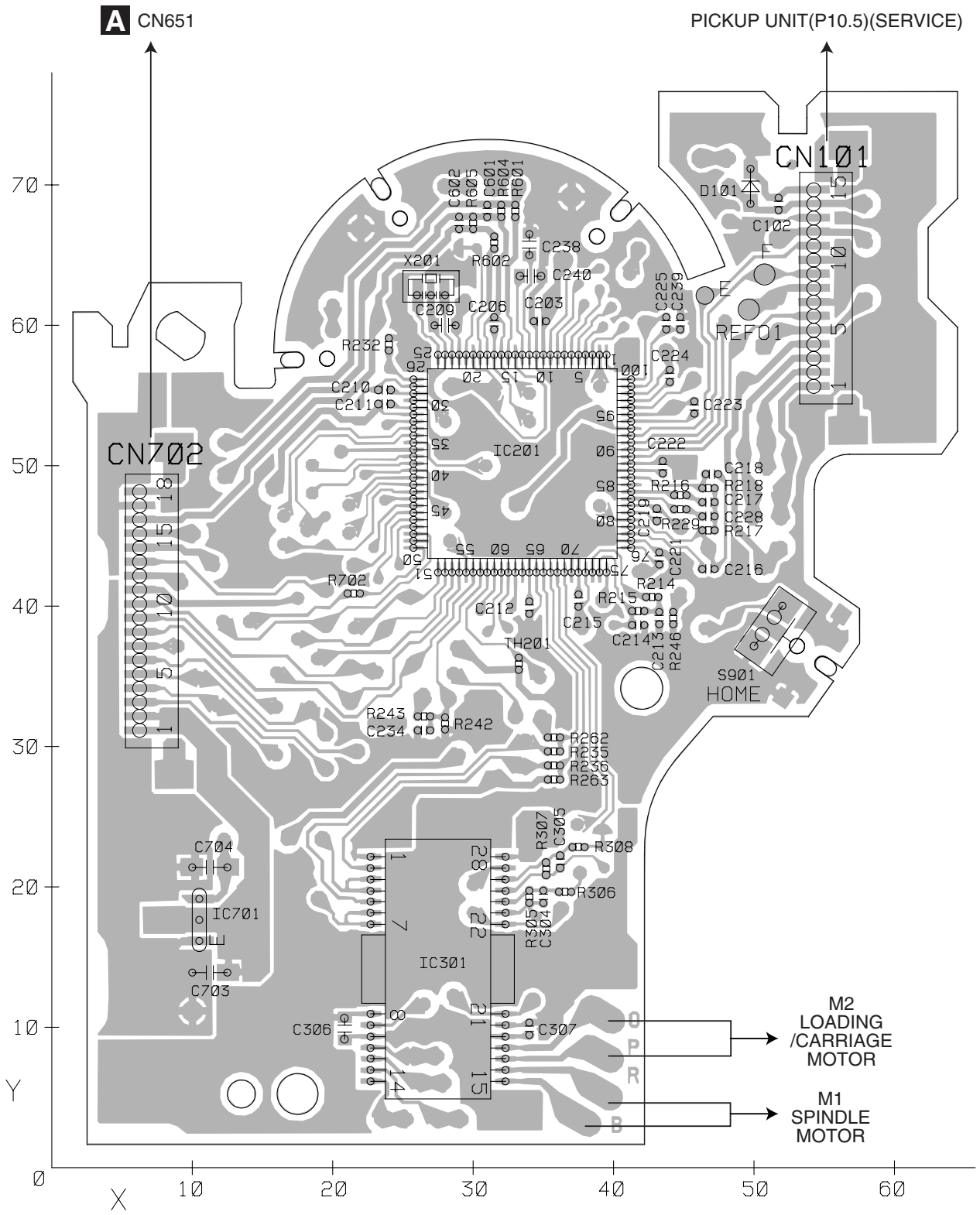
E

F

4.3 CD CORE UNIT(S10.5)

C CD CORE UNIT(S10.5)

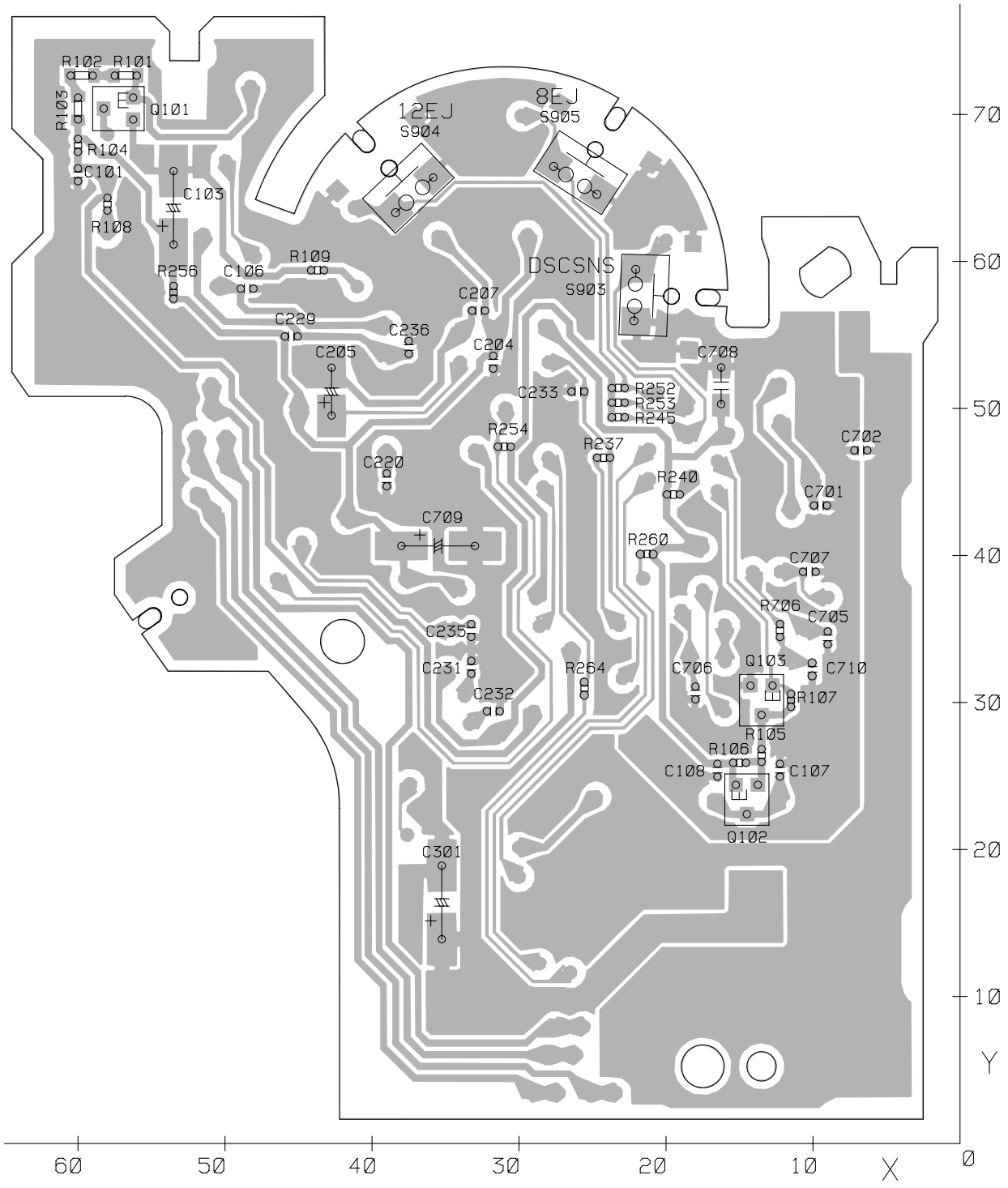
SIDE A



C

C CD CORE UNIT(S10.5)

SIDE B



5. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

  Chip Resistor

  RS1/◯S◯◯◯J,RS1/◯◯S◯◯◯J

  Chip Capacitor (except for CQS.....)

  CKS....., CCS....., CSZS.....
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Meaning of the figures and others in the parentheses in the parts list.*

  Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

  IC 301 (A, 91, 111) IC NJM2068V

Unit Number : CWN2131
Unit Name : Tuner Amp Unit
Unit Number :
Unit Name : Keyboard Unit
Unit Number : CWX3090
Unit Name : CD Core Unit(S10.5)

A

Unit Number : CWN2131
Unit Name : Tuner Amp Unit

MISCELLANEOUS

Circuit Symbol and No.		Part No.
IC 151	(B,121,99) IC	PML014A
IC 301	(A,92,131) IC	PAL007C
IC 601	(B,126,41) IC	PN5010A
IC 911	(A,20,78) IC	BA4918-V12
Q 201	(B,127,127) Transistor	UMD2N
Q 351	(B,159,125) Transistor	UMH3N
Q 601	(A,149,64) Transistor	2SD1858
Q 821	(B,29,10) Transistor	2SA1036K
Q 822	(B,20,9) Transistor	DTC114EUA
Q 931	(B,57,95) Transistor	2SC2412K
Q 991	(A,6,113) Transistor	2SD2396
Q 992	(B,11,103) Transistor	UMD2N
D 301	(A,64,121) Diode	MPG06G-6415G3
D 302	(A,52,121) Diode	MPG06G-6415G3
D 832	(B,73,5) Diode	FTZ6R8E
D 901	(A,47,107) Diode	MPG06G-6415G3
D 902	(A,47,104) Diode	MPG06G-6415G3
D 911	(A,49,78) Diode	MPG06G-6415G3
D 912	(A,43,78) Diode	MPG06G-6415G3
D 931	(A,63,106) Diode	HZS7L(A1)
D 991	(A,17,110) Diode	HZS7L(C3)
L 151	(A,135,103) Inductor	LAU2R2K
L 401	(A,147,79) Inductor	LAU2R2K
L 402	(A,143,96) Inductor	LAU2R2K
L 407	(B,163,64) Inductor	CTF1473
L 601	(B,116,19) Inductor	CTF1389
L 602	(A,150,22) Inductor	LAUR47K
L 603	(A,111,76) Inductor	LAU2R2K
L 604	(A,119,67) Inductor	LAUR47K
L 605	(A,125,66) Inductor	LAUR47K
L 606	(A,145,67) Inductor	LAU1R0K
L 607	(A,146,59) Inductor	LAU1R0K
L 608	(A,133,67) Inductor	LAU1R5K
L 609	(A,130,67) Inductor	LAU1R5K
L 610	(A,137,64) Inductor	LAU1R2J
L 611	(B,134,79) Inductor	CTF1379
L 612	(B,132,79) Inductor	CTF1379
L 613	(B,143,58) Inductor	CTF1379
L 614	(B,120,64) Inductor	CTF1379
L 615	(B,150,71) Inductor	CTF1379
L 616	(B,142,75) Inductor	CTF1379
L 617	(B,145,50) Inductor	CTF1389
L 801	(A,71,22) Inductor	LAU2R2K
L 901	(A,34,96) Choke Coil 600 µH	CTH1291
X 601	(A,140,60) Crystal 74.100 MHz	CSS1728
X 602	(A,112,56) Crystal 4.718 6 MHz	CSS1727
⚠FU351	(B,132,130) Fuse 3 A	CEK1286
AR401	(B,162,108) Surge Protector	IMSA-6801-01Y901
⚠	Fuse 10 A	CEK1208
	FM/AM Tuner Unit	CWE2025

RESISTORS

R 151	(B,87,93)	RAB4C102J
R 156	(B,88,86)	RS1/16S681J
R 157	(B,92,86)	RS1/16S681J
R 162	(B,137,99)	RS1/16S102J
R 163	(B,103,104)	RS1/16S102J
R 201	(B,123,127)	RS1/16S103J
R 202	(B,129,131)	RS1/16S153J
R 203	(B,123,129)	RS1/16S221J
R 251	(B,101,104)	RS1/16S223J
R 252	(B,135,99)	RS1/16S223J
R 301	(B,93,105)	RS1/16S153J
R 351	(B,163,128)	RS1/16S223J
R 352	(B,163,132)	RS1/16S223J

Circuit Symbol and No.		Part No.
R 353	(B,145,115)	RS1/16S821J
R 354	(B,163,124)	RS1/16S821J
R 404	(B,155,42)	RS1/16S102J
R 405	(B,158,52)	RS1/16S102J
R 406	(B,158,58)	RS1/16S102J
R 407	(B,158,60)	RS1/16S102J
R 408	(B,167,48)	RAB4C104J
R 409	(B,158,44)	RS1/16S391J
R 410	(B,158,46)	RS1/16S681J
R 411	(B,158,48)	RS1/16S681J
R 412	(B,158,50)	RS1/16S681J
R 413	(B,158,54)	RS1/16S472J
R 601	(B,123,25)	RS1/16S473J
R 603	(B,106,37)	RS1/16S473J
R 606	(B,107,67)	RS1/16S473J
R 608	(B,139,57)	RS1/16S470J
R 610	(B,120,61)	RS1/16S203J
R 611	(B,137,68)	RS1/16S182J
R 612	(B,114,72)	RS1/16S563J
R 613	(B,140,49)	RS1/16S302J
R 615	(B,112,72)	RS1/16S563J
R 616	(B,156,37)	RS1/16S104J
R 617	(B,134,30)	RS1/16S473J
R 618	(B,145,38)	RS1/16S473J
R 619	(B,146,36)	RS1/16S104J
R 638	(B,157,86)	RS1/16S273J
R 643	(B,156,35)	RS1/16S104J
R 644	(B,97,64)	RS1/16S0R0J
R 645	(B,98,17)	RS1/16S0R0J
R 646	(B,157,13)	RS1/16S0R0J
R 648	(B,157,72)	RS1/16S0R0J
R 651	(B,48,28)	RS1/16S104J
R 652	(B,48,30)	RS1/16S102J
R 653	(B,50,36)	RS1/16S102J
R 654	(B,51,33)	RS1/16S221J
R 656	(B,104,24)	RS1/16S104J
R 657	(B,104,26)	RS1/16S104J
R 658	(B,49,33)	RS1/16S104J
R 659	(B,104,27)	RS1/16S472J
R 660	(B,104,29)	RS1/16S472J
R 661	(B,108,26)	RS1/16S221J
R 662	(B,108,27)	RS1/16S221J
R 663	(B,108,29)	RS1/16S221J
R 664	(B,76,52)	RS1/16S473J
R 666	(B,165,27)	RS1/16S103J
R 670	(B,131,22)	RS1/16S473J
R 672	(B,107,44)	RS1/16S104J
R 673	(B,134,25)	RAB4C104J
R 674	(B,129,24)	RS1/16S104J
R 675	(B,91,56)	RS1/16S473J
R 676	(B,120,18)	RS1/16S104J
R 803	(B,84,16)	RS1/16S222J
R 821	(B,24,11)	RS1/16S562J
R 822	(B,24,9)	RS1/16S103J
R 831	(B,34,9)	RS1/16S1R0J
R 832	(B,83,24)	RS1/16S473J
R 833	(A,78,20)	RD1/4PU222J
R 834	(A,81,20)	RD1/4PU222J
R 835	(A,59,18)	RD1/4PU222J
R 837	(A,74,16)	RD1/4PU103J
R 839	(A,86,12)	RD1/4PU222J
R 840	(A,84,12)	RD1/4PU222J
R 841	(B,72,25)	RS1/16S104J
R 855	(B,79,64)	RS1/16S104J
R 873	(B,137,21)	RS1/16S103J
R 874	(B,137,29)	RS1/16S103J
R 931	(B,104,37)	RS1/16S104J
R 932	(B,59,98)	RS1/16S223J
R 933	(A,68,104)	RD1/4PU102J
R 934	(B,64,110)	RS1/16S472J
R 935	(B,59,113)	RS1/16S473J
R 991	(A,12,113)	RD1/4PU271J

CAPACITORS

C 151	(B,106,98)	CKSRYB224K16
C 152	(B,131,93)	CKSRYB224K16
C 153	(B,106,102)	CKSRYB105K10
C 154	(B,131,95)	CKSRYB105K10
C 155	(A,124,110)	CEJQ470M10
C 156	(B,131,99)	CKSRYB105K10
C 157	(B,106,104)	CKSRYB105K10
C 162	(B,131,100)	CKSRYB105K10
C 163	(B,106,105)	CKSRYB105K10
C 164	(A,117,110)	CEJQ100M16
C 165	(B,120,110)	CKSRYB104K16
C 201	(A,126,131)	CEJQ330M10
C 253	(B,95,102)	CKSRYB104K16
C 301	(B,124,120)	CKSQYB474K16
C 302	(B,119,120)	CKSQYB474K16
C 303	(B,122,120)	CKSQYB474K16
C 304	(B,117,120)	CKSQYB474K16
C 305	(B,123,123)	CKSRYB474K10
C 306	(B,119,123)	CKSRYB474K10
C 307	(B,121,123)	CKSRYB474K10
C 308	(B,117,123)	CKSRYB474K10
C 309	(B,121,137)	CKSQYB225K10
C 310	(B,114,141)	CKSQYB225K10
C 312	(A,98,120)	CEJQ100M16
C 313	(B,98,138)	CKSRYB104K16
C 353	(A,142,116)	CEJQ2R2M50
C 354	(A,141,110)	CEJQ2R2M50
C 359	(B,162,134)	CCSQCH471J50
C 402	(B,140,98)	CKSRYB103K50
C 404	(A,147,94)	CEJQ101M10
C 405	(B,143,98)	CKSRYB103K50
C 406	(B,167,51)	CCSRCH390J50
C 409	(B,158,43)	CCSRCH100D50
C 601	(B,117,24)	CKSRYB105K10
C 602	(B,118,27)	CKSRYB103K50
C 603	(B,121,25)	CKSRYB103K50
C 605	(B,105,72)	CKSRYB104K16
C 606	(B,103,53)	CKSRYB103K50
C 607	(B,116,53)	CKSRYB103K50
C 608	(B,92,77)	CKSRYB103K50
C 609	(B,113,69)	CKSRYB331K50
C 610	(A,95,77)	CEJQ101M6R3
C 611	(B,113,67)	CKSRYB331K50
C 612	(B,118,56)	CKSRYB103K50
C 613	(A,102,56)	CEAL101M6R3

Circuit Symbol and No.			Part No.
C 614	(B,166,86)		CKSRYB102K50
C 615	(B,122,59)		CKSRYB331K50
C 616	(B,122,67)		CKSRYB105K10
C 617	(B,128,58)		CKSRYB105K10
C 618	(B,110,52)		CCSRCH270J50
C 619	(B,141,68)		CKSRYB103K50
C 620	(B,142,54)		CKSRYB105K10
C 621	(B,149,67)		CKSRYB103K50
C 622	(B,139,51)		CKSRYB104K16
C 623	(B,131,64)		CKSRYB102K50
C 624	(B,129,64)		CKSRYB102K50
C 625	(B,135,70)		CCSRCH270J50
C 626	(B,128,70)		CCSRCH270J50
C 627	(B,133,76)		CCSRCH150J50
C 628	(B,141,62)		CKSRYB102K50
C 629	(B,134,57)		CCSRCH4R0C50
C 630	(B,141,66)		CCSRCH8R0D50
C 631	(B,105,70)		CKSRYB472K50
C 632	(B,128,21)		CKSRYB104K16
C 633	(B,144,29)		CKSRYB104K16
C 634	(B,110,55)		CCSRCH270J50
C 635	(B,145,52)		CKSRYB104K16
C 637	(B,108,75)		CKSRYB103K50
C 640	(B,122,57)		CKSRYB104K16
C 642	(B,106,100)		CKSRYB182K50
C 643	(B,131,97)		CKSRYB182K50
C 646	(B,114,20)		CKSRYB103K50
C 652	(B,31,22)		CKSRYB103K50
C 821	(B,34,7)		CKSRYB104K16
C 825	(B,59,6)		CCSRCH221J50
C 826	(B,79,11)		CCSRCH221J50
C 827	(B,69,5)		CCSRCH221J50
C 828	(B,67,5)		CCSRCH221J50
C 829	(B,61,5)		CCSRCH221J50
C 830	(B,63,5)		CKSRYB104K16
C 831	(B,65,5)		CCSRCH221J50
C 901	(A,50,112)	3 300 µF/16 V	CCH1732
C 911	(A,56,59)		CEJQ100M16
C 912	(A,46,64)		CEAT102M16
C 913	(B,26,69)		CKSRYB104K16
C 914	(A,50,59)		CEAT221M10
C 915	(A,44,53)		CEJQ100M16
C 916	(A,53,49)		CEJQ100M16
C 917	(B,26,74)		CKSRYB104K16
C 991	(B,9,106)		CKSRYB473K25
C 992	(A,10,95)		CEJQ101M10

B

Unit Number :
Unit Name : Keyboard Unit

MISCELLANEOUS

IC 1801	(B,26,97)	IC	PD6340A
D 1803	(A,6,11)	LED	CL-195PG-CD
D 1804	(A,15,23)	LED	CL-195PG-CD
D 1805	(A,27,12)	LED	CL-195PG-CD
D 1806	(A,36,62)	LED	CL-195PG-CD
D 1807	(A,36,52)	LED	CL-195PG-CD
D 1808	(A,36,44)	LED	CL-195PG-CD
D 1809	(A,20,136)	LED	CL-195PG-CD
D 1810	(A,22,126)	LED	NESW505C-5273
D 1812	(A,31,29)	LED	CL-195PG-CD
D 1813	(A,20,35)	LED	CL-195PG-CD
D 1814	(A,36,73)	LED	CL-195PG-CD
D 1815	(A,36,83)	LED	CL-195PG-CD
D 1816	(A,36,94)	LED	CL-195PG-CD
D 1817	(A,37,124)	LED	CL-195PG-CD
D 1818	(A,36,115)	LED	CL-195PG-CD
D 1819	(A,36,104)	LED	CL-195PG-CD
D 1820	(A,15,146)	LED	CL-195PG-CD
D 1821	(A,20,151)	LED	CL-195PG-CD
D 1822	(A,25,141)	LED	CL-195PG-CD
D 1823	(A,26,155)	LED	CL-195PG-CD
D 1825	(A,4,153)	LED	CL-195PG-CD
D 1826	(B,31,145)	Diode	MALS068X
D 1827	(B,29,138)	Diode	MALS068X
D 1828	(B,36,130)	Diode	MALS068X
X 1801	(B,34,88)	Ceramic Resonator 5 MHz	CSS1731
S 1831	(A,22,27)	Rotary Encoder(VOLUME)	YSD5001
		LCD	CAW1931

RESISTORS

R 1801	(B,27,78)	RS1/16S222J
R 1802	(B,28,78)	RS1/16S222J
R 1803	(B,21,15)	RS1/4SA561J
R 1804	(B,28,8)	RS1/4SA561J
R 1805	(B,17,18)	RS1/4SA561J
R 1806	(B,25,8)	RS1/4SA561J
R 1807	(B,17,149)	RS1/4SA561J
R 1808	(B,14,147)	RS1/4SA561J
R 1809	(B,20,149)	RS1/4SA821J
R 1813	(B,24,146)	RS1/4SA681J
R 1832	(B,22,33)	RS1/16S473J
R 1837	(B,27,138)	RS1/16S101J
R 1838	(B,32,132)	RS1/16S101J

CAPACITORS

C 1801	(B,15,102)	CKSRYB105K10
C 1802	(A,26,126)	CKSRYF104Z25
C 1810	(B,26,138)	CKSRYB472K50
C 1811	(B,33,131)	CKSRYB472K50

C

Unit Number : CWX3090
Unit Name : CD Core Unit(S10.5)

MISCELLANEOUS

IC 201	(A,34,50)	IC	PE5497B
IC 301	(A,28,14)	IC	BA5839FP
Q 101	(B,57,70)	Transistor	2SA1577
Q 102	(B,15,23)	Transistor	2SB1689
X 201	(A,27,62)	Ceramic Resonator 16.934 MHz	CSS1603
S 901	(A,53,37)	Switch(HOME)	CSN1067
S 903	(B,20,58)	Switch(DSCSNS)	CSN1067
S 904	(B,39,66)	Switch(12EJ)	CSN1068

Circuit Symbol and No.			Part No.
S 905	(B,25,68)	Switch(8EJ)	CSN1068

RESISTORS

R 101	(B,57,73)	RS1/10SR2R4J
R 102	(B,60,73)	RS1/10SR2R4J
R 103	(B,60,70)	RS1/10SR2R7J
R 105	(B,14,26)	RS1/16SS102J
R 106	(B,15,26)	RS1/16SS473J
R 108	(B,58,64)	RS1/16SS105J
R 109	(B,44,59)	RS1/16SS102J
R 214	(A,43,41)	RS1/16SS332J
R 215	(A,42,40)	RS1/16SS183J
R 216	(A,45,48)	RS1/16SS122J
R 217	(A,47,45)	RS1/16SS562J
R 218	(A,47,48)	RS1/16SS472J
R 232	(A,24,59)	RS1/16SS0R0J
R 235	(A,36,30)	RS1/16SS103J
R 236	(A,36,29)	RS1/16SS103J
R 237	(B,24,47)	RS1/16SS221J
R 240	(B,20,44)	RS1/16SS473J
R 242	(A,28,32)	RS1/16SS103J
R 243	(A,27,32)	RS1/16SS473J
R 245	(B,23,49)	RS1/16SS104J
R 246	(A,44,39)	RS1/16SS103J
R 252	(B,23,51)	RS1/16SS104J
R 253	(B,23,50)	RS1/16SS104J
R 254	(B,31,47)	RS1/16SS104J
R 260	(B,21,40)	RS1/16SS103J
R 262	(A,36,31)	RS1/16SS472J
R 263	(A,36,28)	RS1/16SS472J
R 264	(B,26,31)	RS1/16SS102J
R 305	(A,34,19)	RS1/16SS183J
R 306	(A,37,20)	RS1/16SS183J
R 307	(A,35,21)	RS1/16SS183J
R 308	(A,38,23)	RS1/16SS183J
R 601	(A,33,68)	RS1/16SS101J
R 602	(A,32,66)	RS1/16SS101J
R 702	(A,22,41)	RS1/16SS221J
R 706	(B,12,35)	RS1/16SS221J

CAPACITORS

C 103	(B,54,64)	CEVW101M16
C 203	(A,35,60)	CKSSYB104K10
C 205	(B,43,51)	CEVW220M6R3
C 206	(A,32,60)	CKSSYB103K16
C 209	(A,28,60)	CKSRYB104K10
C 210	(A,24,55)	CKSSYB104K10
C 211	(A,24,54)	CKSSYB104K10
C 212	(A,34,40)	CKSSYB104K10
C 213	(A,43,39)	CKSSYB103K16
C 214	(A,42,39)	CKSSYB104K10
C 215	(A,38,40)	CKSSYB104K10
C 216	(A,47,43)	CKSSYB182K50
C 217	(A,47,47)	CCSSCH560J50
C 218	(A,47,49)	CCSSCH5R0C50
C 219	(A,43,47)	CKSSYB104K10
C 220	(B,39,45)	CKSSYB104K10
C 221	(A,43,43)	CKSSYB104K10
C 222	(A,44,50)	CKSSYB104K10
C 223	(A,46,54)	CCSSCH680J50
C 224	(A,44,56)	CCSSCH470J50
C 225	(A,44,60)	CKSSYB103K16
C 229	(B,46,55)	CKSSYB104K10
C 231	(B,33,32)	CKSSYB102K50
C 232	(B,32,29)	CKSSYB102K50
C 233	(B,26,51)	CKSSYB103K16
C 236	(B,38,54)	CKSSYB104K10
C 238	(A,34,66)	CKSRYB104K10
C 240	(A,34,64)	CKSRYB104K10
C 304	(A,35,19)	CKSSYB472K25
C 305	(A,36,22)	CKSSYB223K16
C 306	(A,21,10)	CKSRYB105K10
C 705	(B,9,34)	CCSSCH101J50
C 710	(B,10,32)	CKSSYB102K50

Miscellaneous Parts List

	Pickup Unit(P10.5)(Service)	CXX1942
M 1	Motor Unit(SPINDLE)	CXC7134
M 2	Motor Unit(LOADING/CARRIAGE)	CXC4026

6. ADJUSTMENT
6.1 CD ADJUSTMENT

1) Cautions on adjustments

• In this product the single voltage (3.3 V) is used for the regulator. The reference voltage is the REFO1 (1.65 V) instead of the GND.

If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:

a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.

b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.

c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

• Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

• For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

• In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

• The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1k ohms in series.

• The load and eject operation is not guarantied with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode

This mode is used to adjust the CD mechanism module.

• To enter the test mode.

While pressing the 4 and 6 keys at the same time, reset.

• To exit from the test mode.

Turn off the ACC and back up.

Notes:

a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.

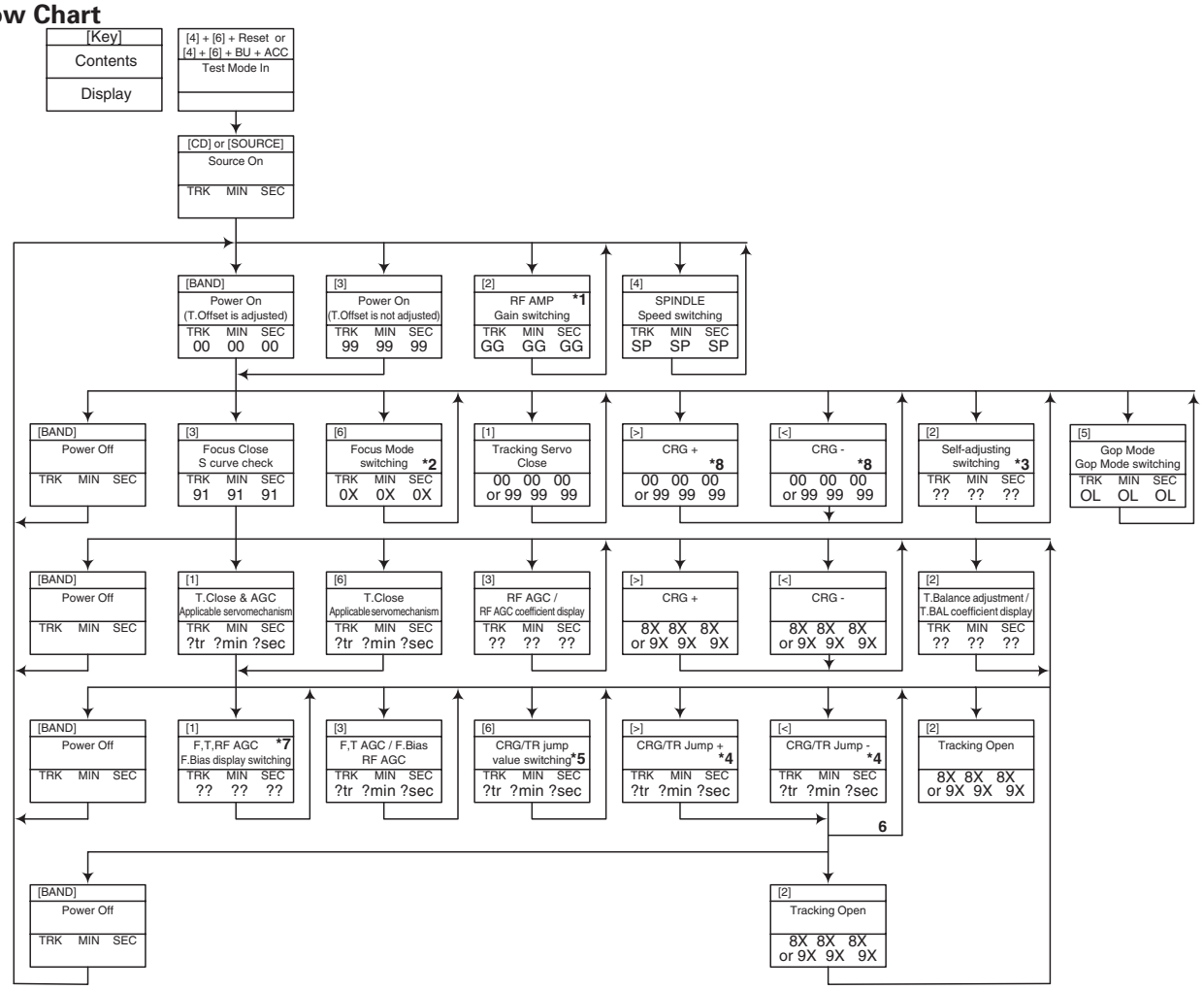
b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.

c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.

d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.

e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0 dB, and the auto-adjustment values are reset to the default settings.

● Flow Chart



*1) TYP (TRK MIN SEC) → + 6 dB ($^{TRK}06^{MIN}06^{SEC}06$) → + 12 dB ($^{TRK}12^{MIN}12^{SEC}12$)

*2) Focus Close → S Curve check setting → F EQ measurement setting
$^{TRK}00^{MIN}00^{SEC}00$ $^{TRK}01^{MIN}01^{SEC}01$ $^{TRK}02^{MIN}02^{SEC}02$
($^{TRK}99^{MIN}99^{SEC}99$)

*3) F.Offset Display → RF.Offset → T.Offset Display → Switch to the order of the original display

*4) 1TR/4TR/10TR/32TR/100TR

*5) Single → 4TR →10TR → 32TR → 100TR → CRG Move
9x(8x):91(81) 92(82) 93(83) 94(84) 95(85) 96(86)

*6) Only at the time of CRG move, 100TR jump

*7) TRK/MIN/SEC → F.AGC → T.AGC → F.Bias → RF AGC

*8) CRG motor voltage = 2 [V]

[Key]	Operation Test Mode
[BAND]	Power On/Off
[>]	CRG + / TR Jump + (Direction Of the external surface)
[<]	CRG - / TR Jump - (Direction Of the internal surface)
[1]	T. CLS & AGC & Applicable servomechanism / AGC,AGC display setting
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T. Open
[3]	F. Close,S Curve / Rough Servo and RF AGC / F,T,RF AGC
[4]	
[5]	Error Rate measurement ON : ERR 30Counts Start BER display data[%]
[6]	F. Mode switching / Tracking Close / CRG•TR Jump Switching

*) • After the [Eject] key is pressed keys other than the [Eject] key should not be pressed, until disc ejection is complete.
• When the key [2] or [3] is pressed during the Focus Search, the power supply should be immediately turned off (otherwise the lens sticks to Wall, causing the actuator to be damaged).
• In the case of TR jump other than to 100TR, the function shall continue to be processed even if the TR jump key is released. As for the CRG Move and 100TR Jump, the mechanism shall be set to the Tracking Close mode when the key is released.
• When the power is turned on/off the jump mode is reset to the Single TR (91) while the gain of the RFAMP is reset to 0 dB. At the same time all the self-adjusting values shall return to the default setting.

6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

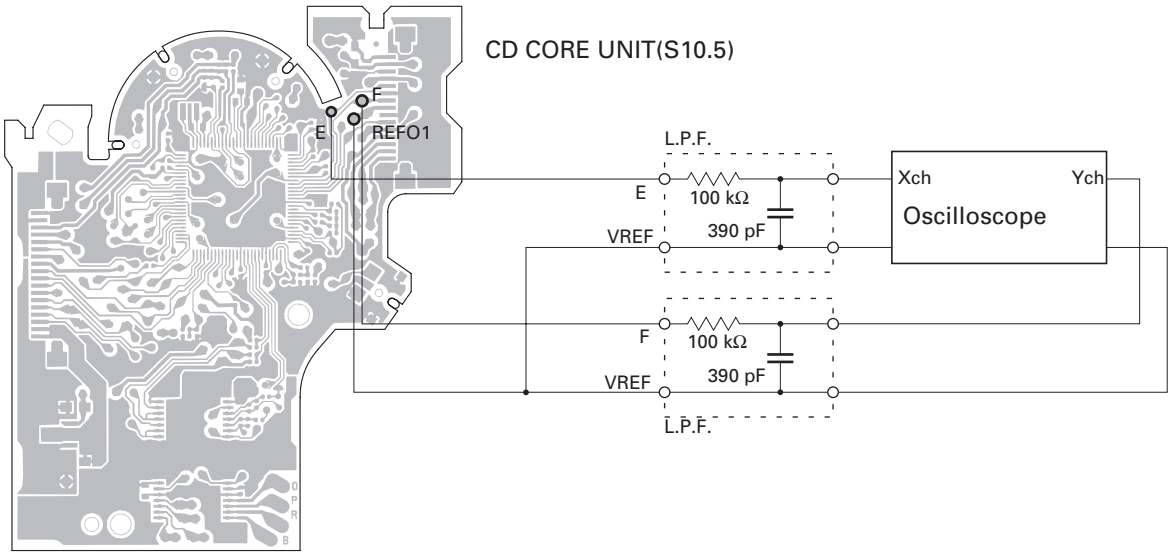
• **Note :**
The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• **Purpose :**
To check that the grating is within an acceptable range when the PU unit is changed.

• **Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• **Method :**

• Measuring Equipment	• Oscilloscope, Two L.P.F.
• Measuring Points	• E, F, REFO1
• Disc	• TCD-782
• Mode	• TEST MODE



• **Checking Procedure**

1. In test mode, load the disc and switch the 3 V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

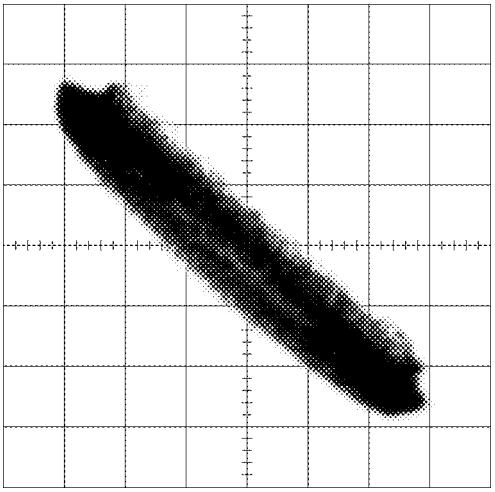
• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• **Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

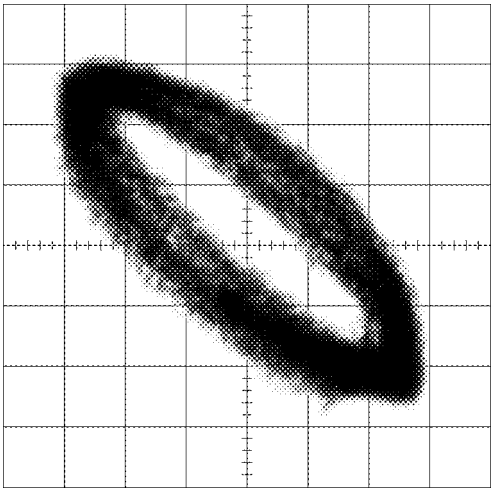
Grating waveform

Ech → Xch 20 mV/div, AC
Fch → Ych 20 mV/div, AC

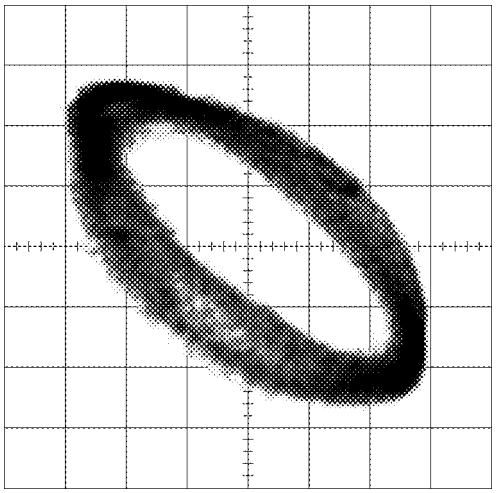
0°



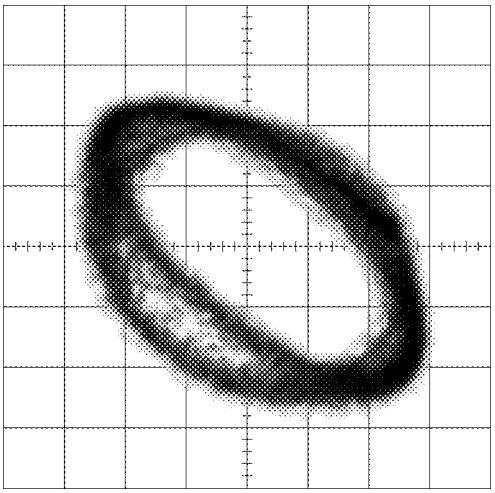
30°



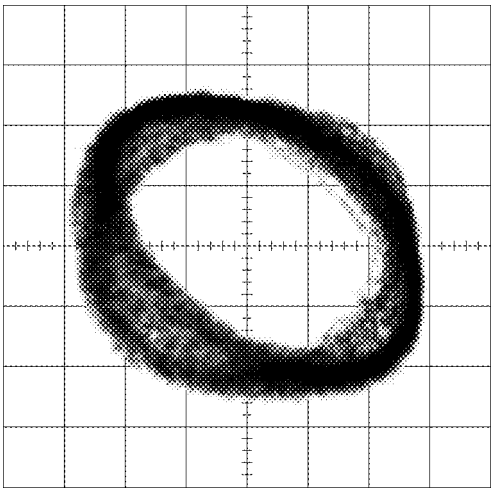
45°



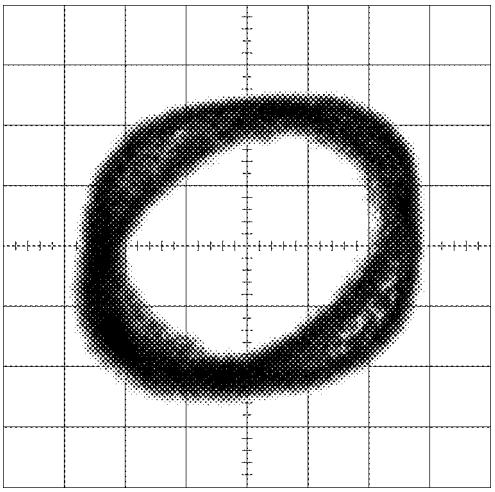
60°



75°



90°



6.3 ERROR MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR–xx	ERR–xx	E–xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Communication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

6.4 SYSTEM MICROCOMPUTER TEST PROGRAM

● PCL Output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN IC601(Pin 112) terminal to H. The clock signal is output from the SCET IC601(Pin 43) terminal.
The frequency of the clock signal is 1 Hz. The clock signal should be 1 Hz ± 0.000 04 Hz.
If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

● Removing the CD Mechanism Module (Fig.1)

1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

● Removing the Grille Assy (Fig.1)

2 Release the two latchs and then remove the Grille Assy.

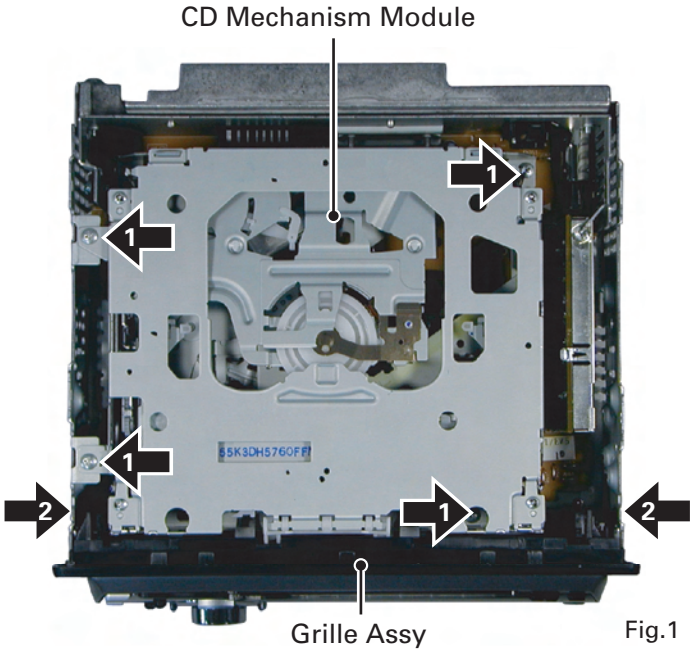


Fig.1

● Removing the Tuner Amp Unit (Fig.2)

1 Remove the two screws.

2 Remove the two screws.

3 Straighten the tabs at two locations indicated.

4 Remove the two screws and then remove the Tuner Amp Unit.

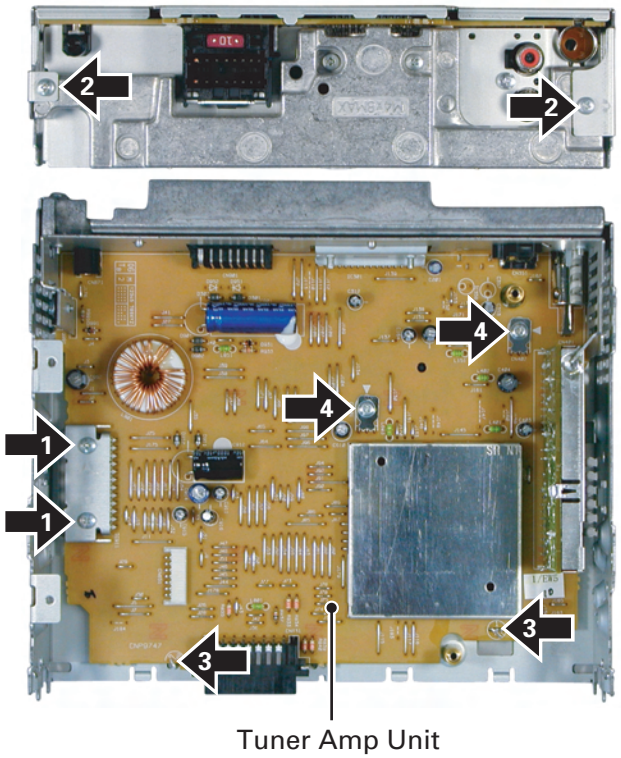
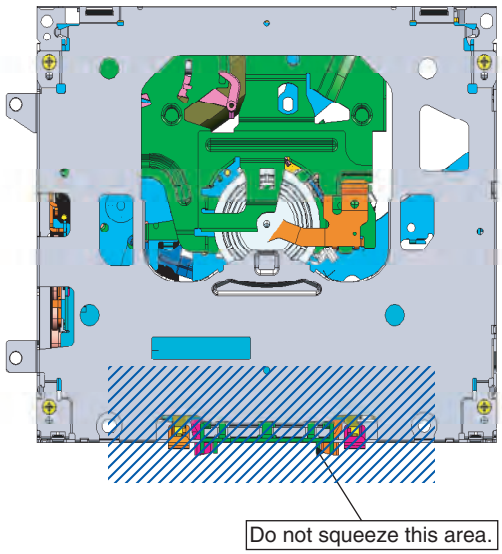


Fig.2

● How to hold the Mechanism Unit

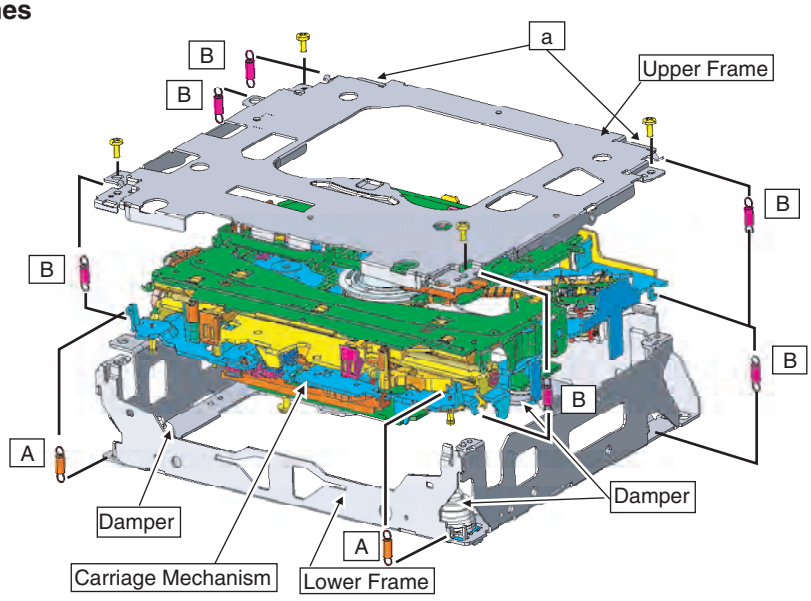
1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.



● Removing the Upper and Lower Frames

1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
3. While lifting the Carriage Mechanism, remove it from the three Dampers.

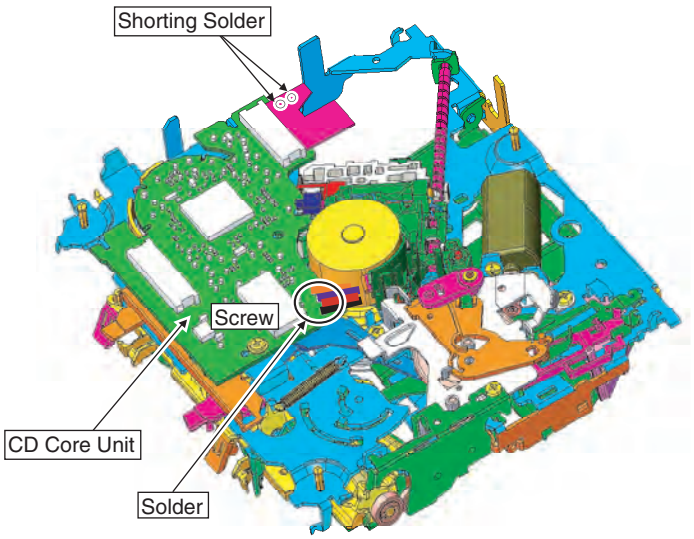
Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.



● How to remove the CD Core Unit

1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

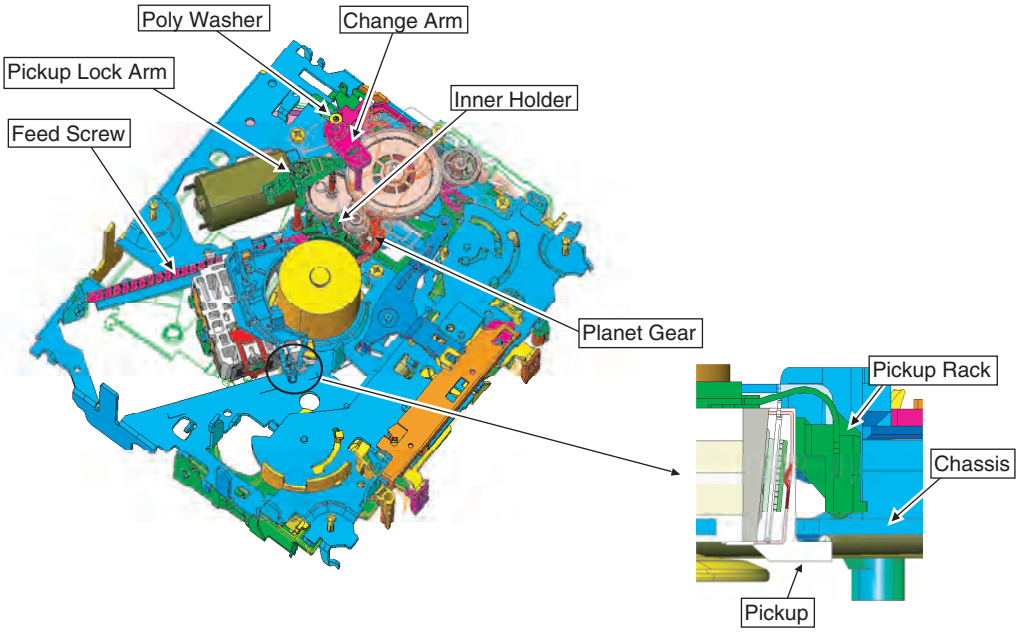
Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.



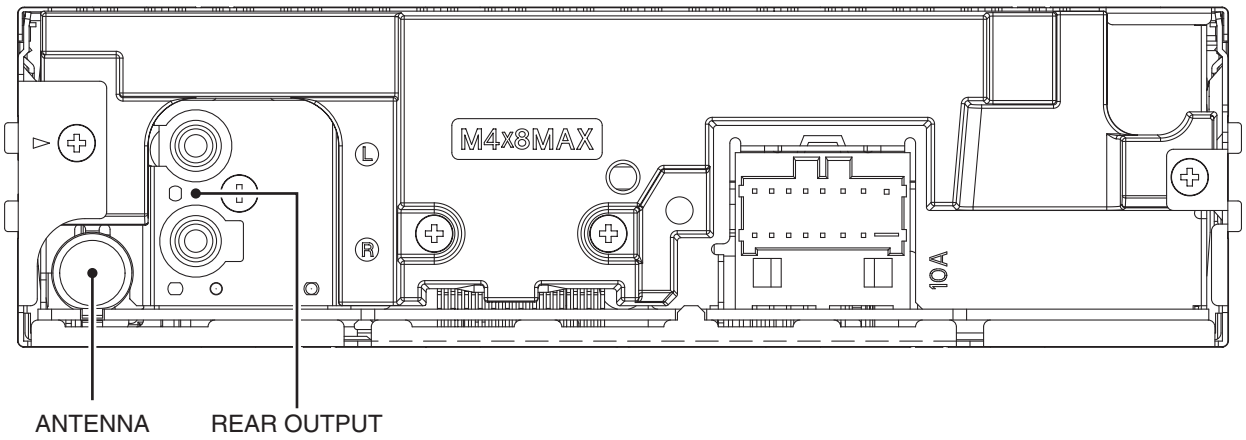
● How to remove the Pickup Unit

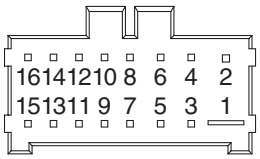
1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.
Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



7.1.2 CONNECTOR FUNCTION DESCRIPTION



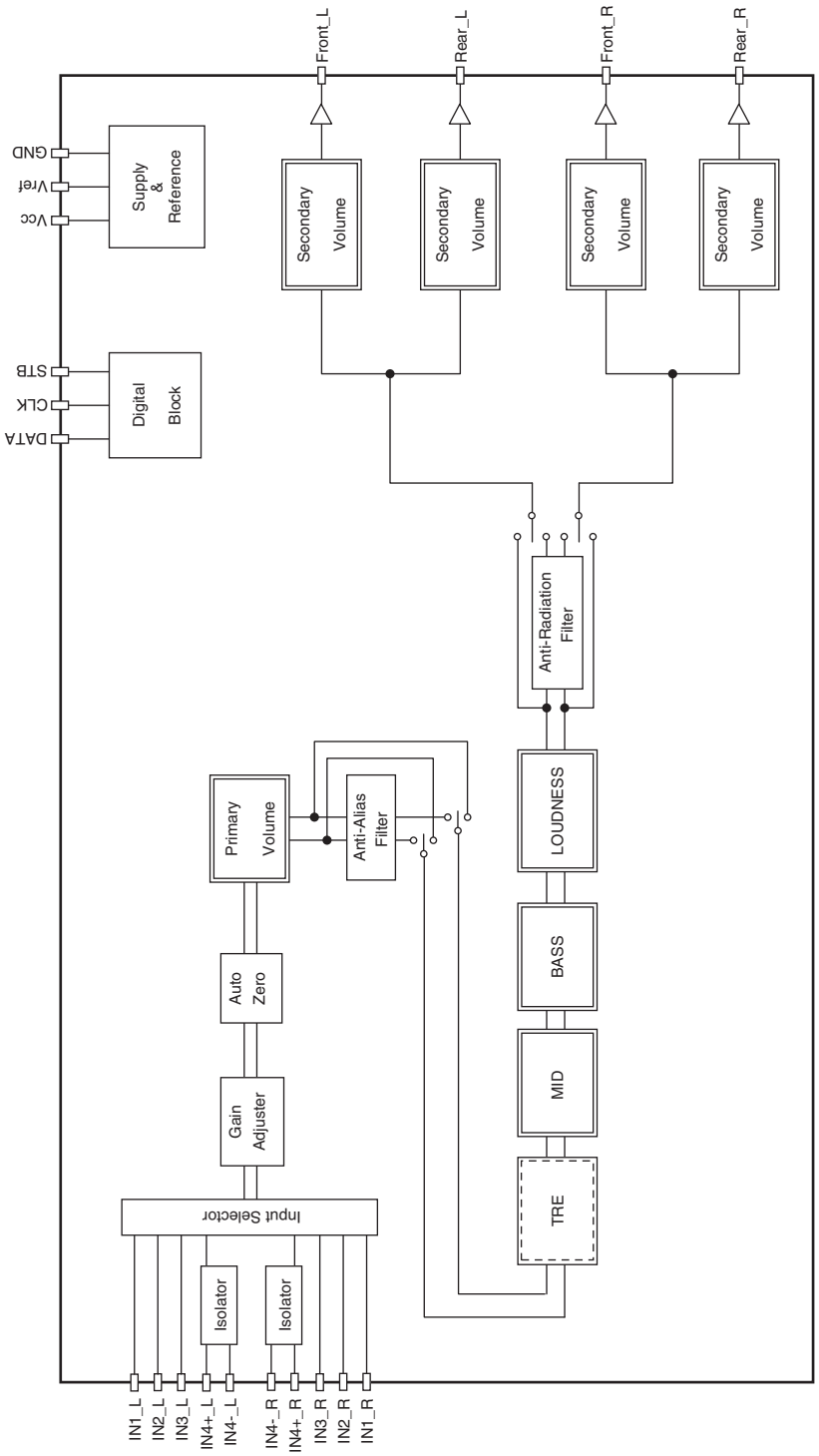


Pin No.		Pin No.	
1	B. UP	9	RL-
2	GND	10	FL-
3	ACC	11	RL+
4	NC	12	FL+
5	NC	13	RR-
6	B.REM	14	FR-
7	NC	15	RR+
8	NC	16	FR+

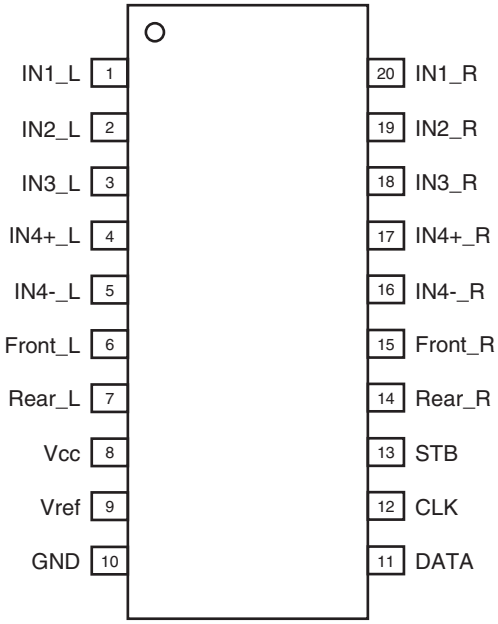
7.2 PARTS
7.2.1 IC

PML014A

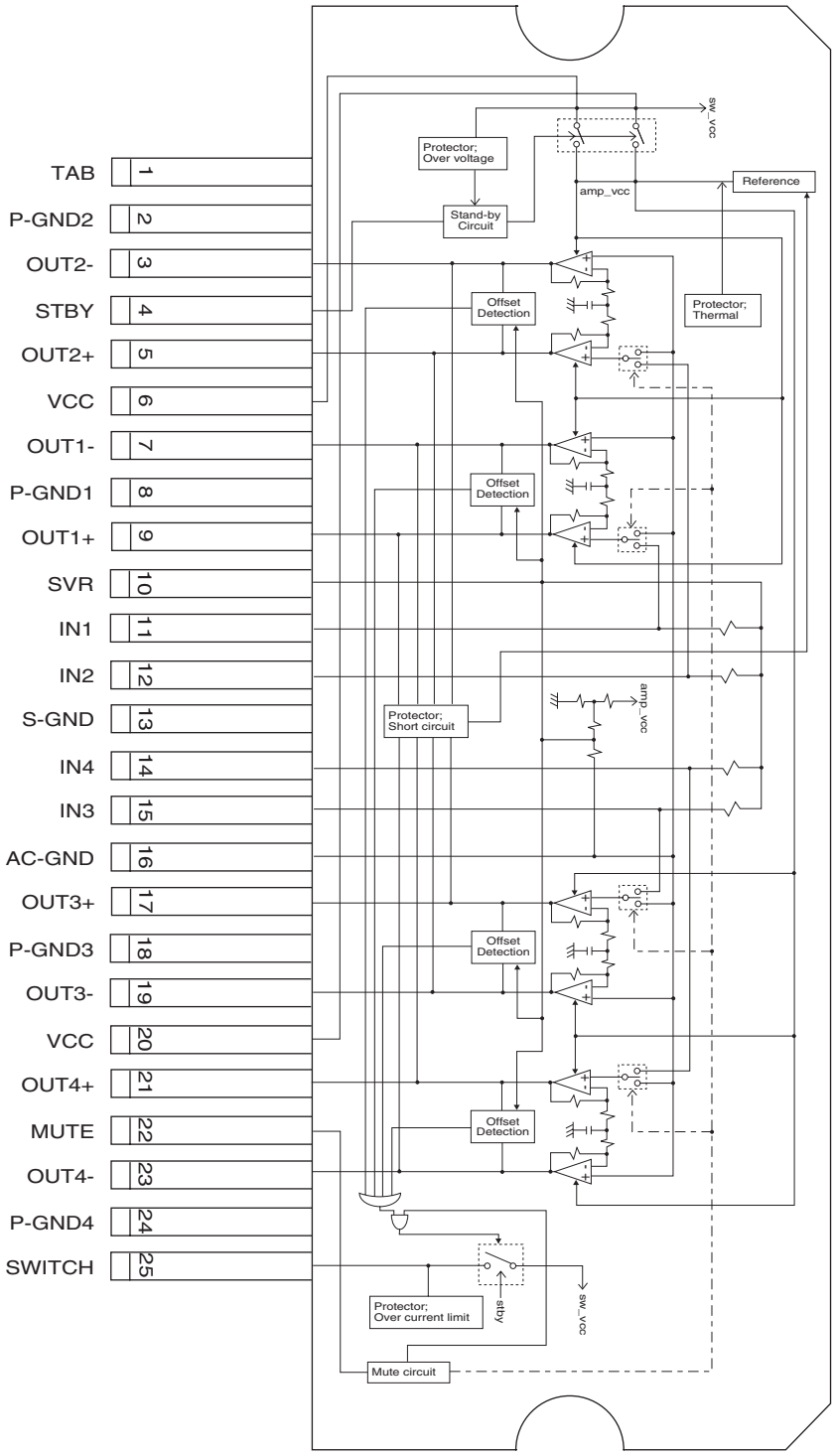
● Block Diagram



● Pin Layout



PAL007C


TAB 1
P-GND2 2
OUT2- 3
STBY 4
OUT2+ 5
VCC 6
OUT1- 7
P-GND1 8
OUT1+ 9
SVR 10
IN1 11
IN2 12
S-GND 13
IN4 14
IN3 15
AC-GND 16
OUT3+ 17
P-GND3 18
OUT3- 19
VCC 20
OUT4+ 21
MUTE 22
OUT4- 23
P-GND4 24
SWITCH 25
Protector; Over voltage
Stand-by Circuit
sw_vcc
amp_vcc
Reference
Protector; Thermal
Offset Detection
Protector; Short circuit
Protector; Over current limit
stby
Mute circuit

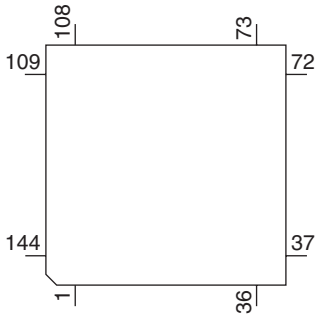
● Pin Functions (PN5010A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	SWVDD	O	C	Power supply output for display microcomputer
2	ILMPW	O	C	Illumination power output
3-6	NC			Not used
7	FLMD0	I		Self-rewriting applied voltage input 0(self mode : H)
8	VDD			VDD
9	M_REGC			Regulator output capacitance stabilizing connection of masked ROM built-in item
10	F_REGC			Regulator output capacitance stabilizing connection of flash memory built-in item
11	VSS			GND
12	$\overline{\text{RESET}}$	I		System reset input
13,14	NC			Not used
15	SYSPW	O	C	System power output
16	CDRESET	O	C	CD mechanism RESET output
17	BRST	O	C	P-BUS : Reset output
18	BRXEN	I/O	C	P-BUS : Reception enable input/output
19	BSRQ	I	C	P-BUS : Service request input
20	BSI/TSI	I	C	P-BUS : Serial data input/Test data input
21	BSO	O	C	P-BUS : Serial data output
22	BSCK/TSCK	I/O	C	P-BUS : Serial clock output/Test data clock synchronizer output
23	DPDT/SELFDO	O	N	Data output for display microcomputer/Data output for self-writing
24	KEYDT/SELFDI	I	C	Key data input from display microcomputer/Data input for self-writing
25-30	NC			Not used
31	EVSS			GHC for external
32	EVDD			VDD for external
33	$\overline{\text{SRC}}$	I	C	Source key
34	$\overline{\text{DSENS}}$	I	C	Detach sense input
35	$\overline{\text{ASENS}}$	I	C	ACC sense input
36	$\overline{\text{BSENS}}$	I	C	Backup sense input
37	NC			Not used
38	BU_SIB	I	C	Data reception from backup circuit
39	BU_SOB	O	C	Data sending to backup circuit
40	BU_SCK	I/O	C	Communication clock with microcomputer for backup circuit
41	BU_A0	O	C	Backup circuit register control
42	BU_STB	O	C	Backup circuit register control
43	BU_HSFLG	I	C	Clock timer signal polling from backup circuit
44	MUTE	O	C	System mute output
45,46	BU_MODE1,0	I		VSS fixed(mode specification terminal for backup circuit test)
47	PWROFF	O		External power-off control
48	RESETOUT	O		Reset signal output for microcomputer
49	BU_REGC			Regulator output capacitance stabilizing connection for backup circuit(1.5 V)
50	BU_VDD	I		Power supply for backup circuit(3.3 V)
51,52	BU_X2,1	I		Input of oscillator circuit for clock timer(4.718 59 MHz)
53	BU_VSS	I		GND for backup circuit
54	PLL_GND	I		Terminal for TUNER only
55	PLL_VDD	I		Terminal for TUNER only
56	$\overline{\text{BU\_RESET}}$	I		Backup circuit reset input
57	DVDD3			Terminal for TUNER only
58	DGND2			Terminal for TUNER only
59	L_OUT			Terminal for TUNER only
60	R_OUT			Terminal for TUNER only
61	COMP			Terminal for TUNER only
62	SL			Terminal for TUNER only
63	AVDD2			Terminal for TUNER only
64	AGND2			Terminal for TUNER only
65	ASUB			Terminal for TUNER only

Pin No.	Pin Name	I/O	Format	Function and Operation
66	DACK			Terminal for TUNER only
67	LCH			Terminal for TUNER only
68	RCH			Terminal for TUNER only
69	WDCK			Terminal for TUNER only
70-74	TEST1-5			Terminal for TUNER only
75	AGND1			Terminal for TUNER only
76	AVDD1			Terminal for TUNER only
77	IF_INA			Terminal for TUNER only
78	IF_INB			Terminal for TUNER only
79	AD_REF			Terminal for TUNER only
80	OSCGND			Terminal for TUNER only
81	XIN			Terminal for TUNER only
82	XOUT			Terminal for TUNER only
83	OSCVDD			Terminal for TUNER only
84	DVDD1			Terminal for TUNER only
85	DREG			Terminal for TUNER only
86	SMC			Terminal for TUNER only
87	AMC			Terminal for TUNER only
88	TU_RESET			Terminal for TUNER only
89-92	DANT1-4			Terminal for TUNER only
93	DGND1			Terminal for TUNER only
94	DVDD2			Terminal for TUNER only
95	FREFR			Terminal for TUNER only
96	FREFA			Terminal for TUNER only
97	FREFB			Terminal for TUNER only
98	DSUB			Terminal for TUNER only
99	LOCK	I	C	PLL lock detection input
100	TUNDO	O	C	PLL serial data output
101	TUNCK	I/O	C	PLL serial clock input/output
102	CE	O	C	Tuner chip enable output
103	TUNDI	I	C	PLL serial data input
104-108	NC			Not used
109	CE2	O	C	Tuner chip enable output 2
110,111	ROT0,1	I	C	Rotary encoder pulse input 0, 1
112	TESTIN	I	C	Test program input
113	ROMDATA	I/O	C	ROM correction data input/output
114	ROMCK	O	C	ROM correction clock
115	ROMCS	O	C	ROM correction chip select
116	SELFOUT	O	C	Self programming operation control output
117,118	NC			Not used
119	BVSS			GND for port
120	BVDD			VDD for port
121	DVDDD4			VDD
122	DGND3			GND
123	VST	O	C	E.VOL strobe output
124	VDT	O	C	E.VOL data output
125	VCK	O	C	E.VOL clock output
126	VDCONT	O	C	CD mechanism power supply output
127	NC			Not used
128	FLMD1	I	C	Self-rewriting applied voltage input 1(fixed to L)
129	NC			Not used
130	KEYD	I	C	Wired remote control input
131,132	NC			Not used
133	P7AVSS			GND for port 7
134	P7AVDD			VDD for port 7
135	AVSS			A/D converter GND

Pin No.	Pin Name	I/O	Format	Function and Operation
136	SL	I		Signal level input
137-140	NC			Not used
141	MODELAD	I		Model select terminal
142	KEYAD	I		Wired remote control AD input
143	NC			Not used
144	AVREF0			A/D converter reference voltage

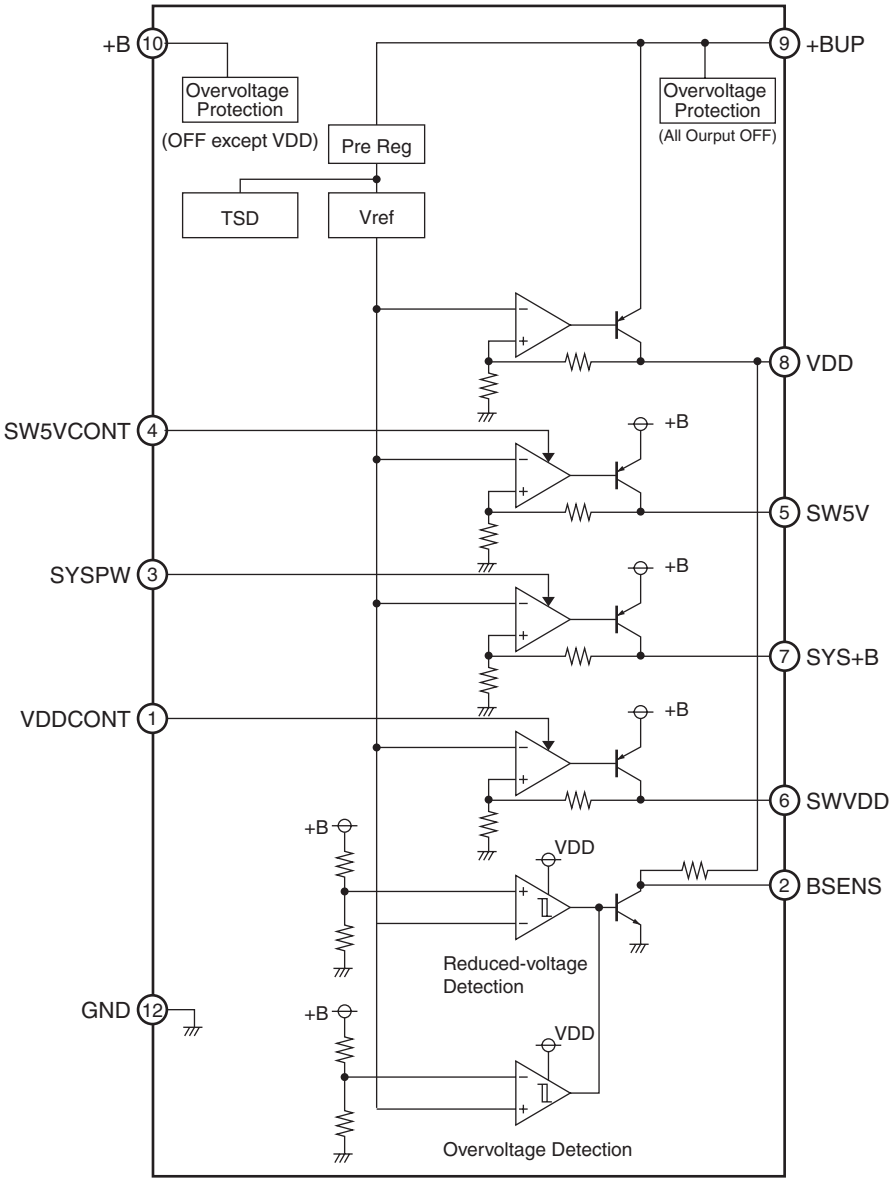
PN5010A



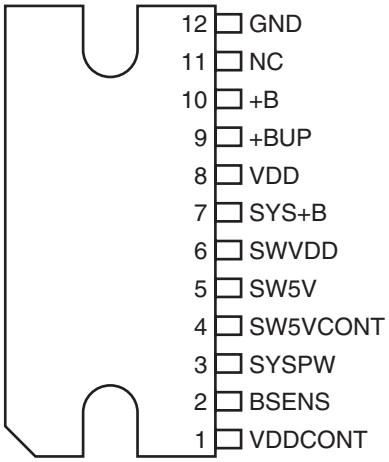
Format	Meaning
C	CMOS
N	Nch open drain

BA4918-V12

● Block Diagram



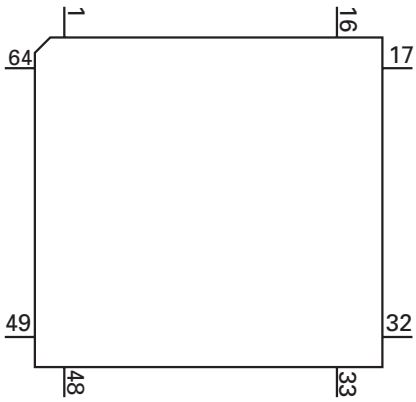
● Pin Layout



● Pin Functions(PD6340A)

Pin No.	Pin Name	I/O	Function and Operation
1-5	SEG4-0	O	LCD segment output
6-9	COM3-0	O	LCD common output
10	VLCD		LCD drive power supply
11-14	KST3-0	O	Key strobe output
15,16	KDT0,1	I	Key data input (analogue input)
17	REW	I	Remote control reception input
18	DPDT	I	Display data input
19	NC		Not used
20	KYDT	O	Key data output
21	MODA		GND
22	X0		Crystal oscillator connection pin
23	X1		Crystal oscillator connection pin
24	VSS		GND
25,26	KDT2,3	I	Key data input
27	NC		Not used
28	KST4	O	Key strobe output
29-32	NC		Not used
33-55	SEG35-13	O	LCD segment output
56	VDD		Power supply
57-64	SEG12-5	O	LCD segment output

PD6340A

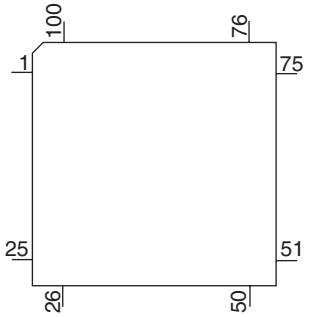


● Pin Functions (PE5497B)

Pin No.	Pin Name	I/O	Function and Operation
1	LD	O	Laser diode control current output
2	PD	I	Photo diode signal (for detecting laser power) input
3	$\overline{\text{RST}}$	I	Reset (CD block)
4	INTQ	O	Interrupt
5	A0	I	Address 0
6	$\overline{\text{STB}}$	I	Strobe
7	$\overline{\text{SCK}}$	I	Serial clock
8	SO	O	Serial data output
9	SI	I	Serial data input
10	D.VDD		Power supply for digital circuits
11	D.GND		Ground for digital circuits
12	REG16		Capacitor connection for regulator (logic)
13	REGS		Capacitor connection for regulator (SRAM)
14	DA.VDD		Power supply for Audio-DAC
15	ROUT	O	R-channel audio signal output
16	DA.GND		Ground for Audio-DAC
17	REGC		Capacitor connection for regulator (RF amp.)
18	DA.GND		Ground for Audio-DAC
19	LOUT	O	L-channel audio signal output
20	DA.VDD		Power supply for Audio-DAC
21	ICEMD	I	Selected to ICE
22	X.VDD		Power supply for the crystal oscillator
23	$\overline{\text{XTAL}}$	O	Crystal connection
24	X.GND		Ground for the crystal oscillator
25	XTAL	I	Crystal connection
26	VPP	I	Programming power supply
27	C.VDD		Power supply for digital circuits(Power supply for the CPU)
28	C.GND		Ground for digital circuits(Ground for the CPU)
29	RESET	I	Reset
30	IO.GND		Ground for the digital port
31	IO.VDD		Power supply for the digital port
32	ICECK	O	Clock for ICE
33	INT0	I	Interrupt
34	INT2	I	Interrupt
35-42	PA0-7	I/O	General port A
43	DOUT	O	Data output (audio)
44	SCKO	O	Serial clock output (audio)
45	LRCK	O	LR clock (audio)
46	TX/EMPH	O	Transmit data/Emphasis information output
47-54	PC0-7	I/O	General port C
55-62	PB0-7	I/O	General port B
63	SD2	O	Sled drive
64	IO.GND		Ground for the digital port
65	IO.VDD		Power supply for the digital port
66	FD	O	Focus drive output (PWM)
67	TD	O	Tracking drive
68	SD	O	Sled drive
69	MD	O	Motor drive output (PWM)
70	TEST	I	Test
71	AD.GND		Ground for the A/D converter
72	AD.VDD		Power supply for the A/D converter
73	EFM	O	EFM signal

Pin No.	Pin Name	I/O	Function and Operation
74	ASY	I	Slice level
75	ATEST	O	Analog test
76	A.VDD		Power supply for the analog system
77	A.GND		Ground for the analog system
78	RFI	I	RF signal input
79	AGCO	O	AGC amp output
80	C3T		Capacitance connection for 3T signal detecting circuit
81	AGCI	I	AGC amp input
82	RFO	O	RF amp output
83	EQ2		Equalizer parts connection for RF amp
84	EQ1		Equalizer parts connection for RF amp
85	RF2-	I	Impedance connection to RF amp for negative feedback
86	RF-	I	Impedance connection to RF amp for negative feedback
87	A.GND		Ground for the analog system
88	A.VDD		Power supply for the analog system
89	A	I	Error signal input
90	B	I	Error signal input
91	F	I	Error signal input
92	E	I	Error signal input
93	REFOUT	O	Reference output
94	FE-	I	Impedance connection to focus error amp for negative feedback
95	FEO	O	Focus error amp output
96	ADCIN	I	A/D converter input
97	TE-	I	Impedance connection to tracking error amp for negative feedback
98	TEO	O	Tracking error amp output
99	TE2	O	Tracking error amp output multiplied by two
100	TEC	I	Tracking error comparator

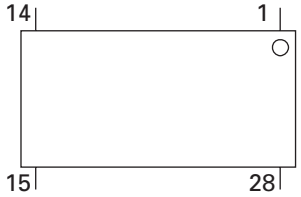
PE5497B



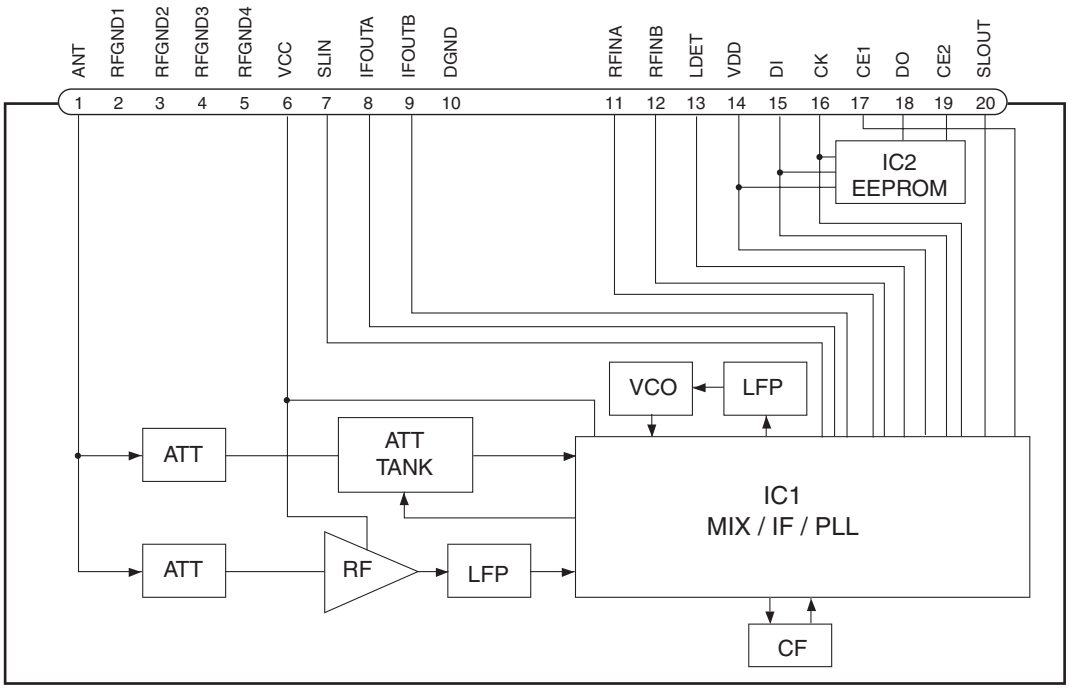
● Pin Functions(BA5839FP)

Pin No.	Pin Name	Function and Operation
1	VR	Input pin for reference voltage
2	OPIN2(+)	Input pin for non-inverting input for CH2 preamplifier
3	OPIN2(-)	Input pin for inverting input for CH2 preamplifier
4	OPOUT2	Output pin for CH2 preamplifier
5	OPIN1(+)	Input pin for non-inverting input for CH1 preamplifier
6	OPIN1(-)	Input pin for inverting input from CH1 preamplifier
7	OPOUT1	Output pin for CH1 preamplifier
8	GND	Ground pin
9	MUTE	Mute control pin
10	POWVCC1	Power supply pin for CH1, CH2, and CH3 at "Power" stage
11	VO1(-)	Driver CH1 - Negative output
12	VO1(+)	Driver CH2 - Positive output
13	VO2(-)	Driver CH2 - Negative output
14	VO2(+)	Driver CH2 - Positive output
15	VO3(+)	Driver CH2 - Positive output
16	VO3(-)	Driver CH2 - Negative output
17	VO4(+)	Driver CH4 - Positive output
18	VO4(-)	Driver CH4 - Negative output
19	POWVCC2	Power supply pin for CH4 at "Power" stage
20	GND	Ground pin
21	CNT	Control pin
22	LDIN	Loading input
23	OPOUTSL	Output pin for preamplifier for thread
24	OPINLSL	Input pin for preamplifier for thread
25	OPOUT3	CH3 preamplifier output pin
26	OPIN3(-)	Input pin for inverting input for CH3 preamplifier
27	OPIN3(+)	Input pin for non-inverting input for CH3 preamplifier
28	PREVCC	PreVcc

BA5839FP



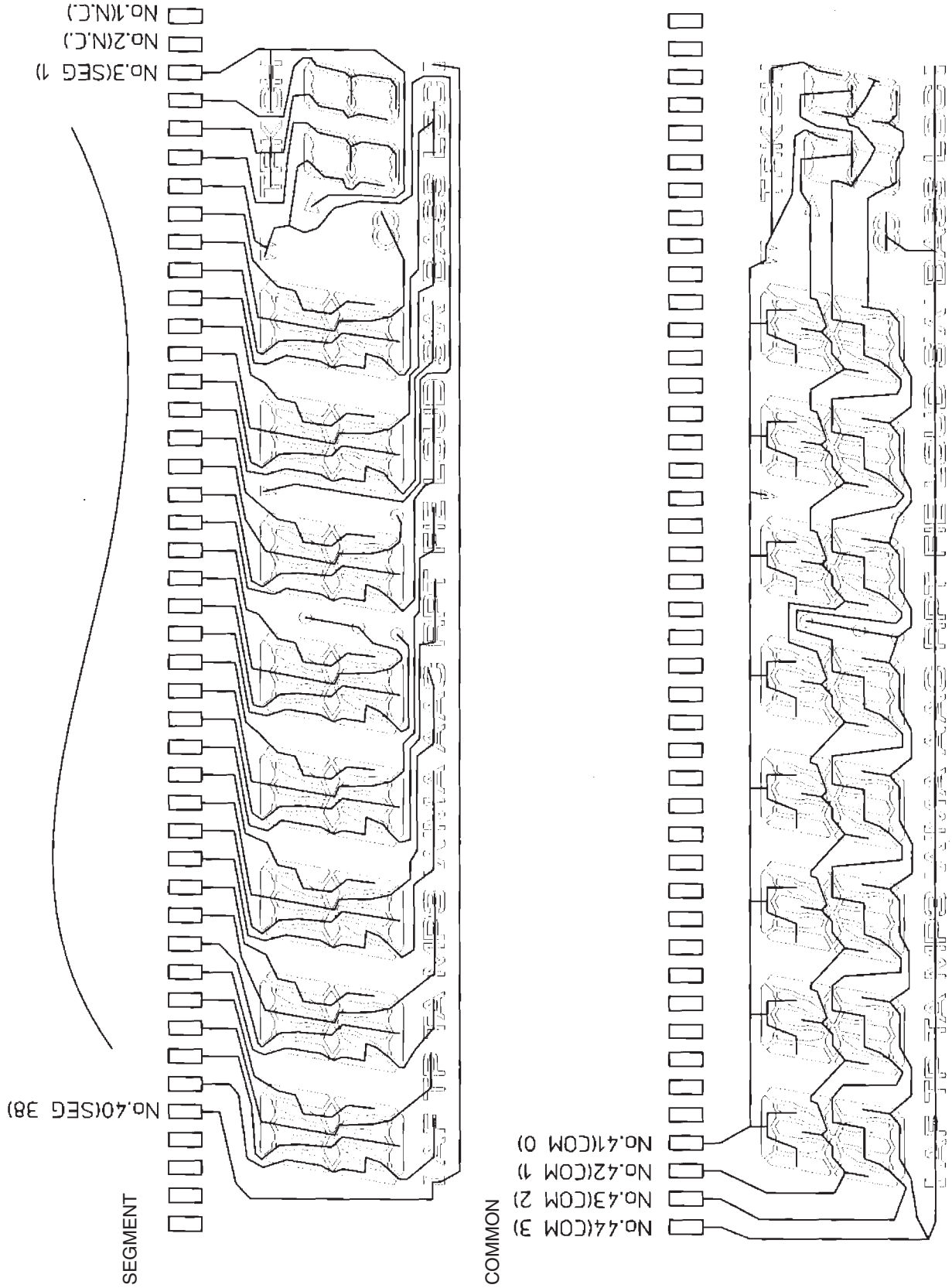
● FM/AM Tuner Unit



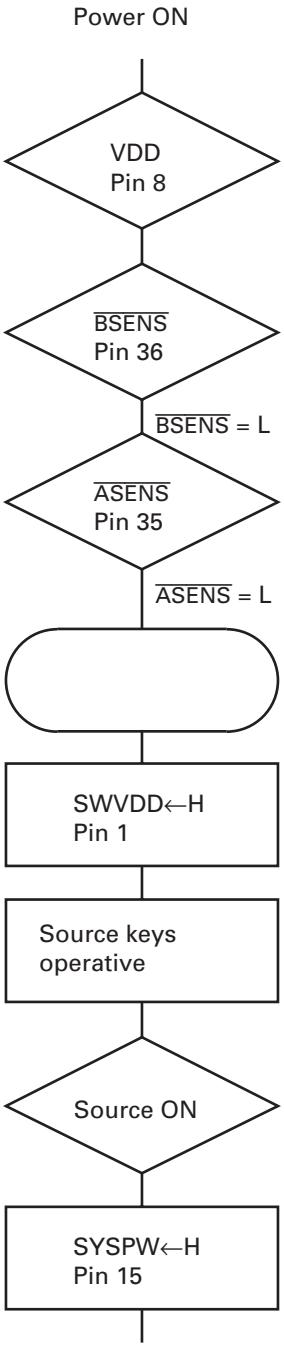
No.	Symbol	I/O	Explain	
1	ANT	I	Antenna Input	Antenna input. 75 Ω. Surge absorber is necessary. Series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the ham of power transmission line.
2	RFGND1		RF Ground	Ground of R.F. block
3	RFGND2		RF Ground	Ground of R.F. block
4	RFGND3		RF Ground	Ground of R.F. block
5	RFGND4		RF Ground	Ground of R.F. block
6	VCC		Power Supply	Power supply for Analog block. D.C 8.4 V ± 0.3 V (performance isn't guaranteed besides 8.4 V)
7	SLIN	I	Signal Level Input	Input signa level from BE_IC
8	IFOUTA	O	IF Output	IF signal output (F.E.output)
9	IFOUTB	O	IF Output	IF signal output (F.E.output)
10	DGND		Digital Ground	Ground of Digital. block
11	REFINA	I	Reference Signal	Input reference signal for PLL part with FE_IC
12	REFINB	I	Reference Signal	Input reference signal for PLL part with FE_IC
13	LDET	O	Lock Detector	PLL lock detecter output "High" active
14	VDD		Power Supply	Power supply for Digital block. D.C 3.3 V ± 0.2 V
15	DI	I	Data In	Data input (not sending data in tuner reception operating in noise being output)
16	CK	I	CK	Clock data input(not sending data in tuner reception operating in noise being output)
17	CE1	I	Chip Enable-1	Chip enable for FE_IC "High" active
18	DO	O	Data Out	Data output
19	CE2	O	Chip Enable-2	Chip enable for EEPROM "Low" active. in power ON/OFF, please turn CE2 into "High" (= VDD).
20	SLOUT	O	Signal Level Output	Output of FM/AM signals level (D.C.)

7.2.2 DISPLAY

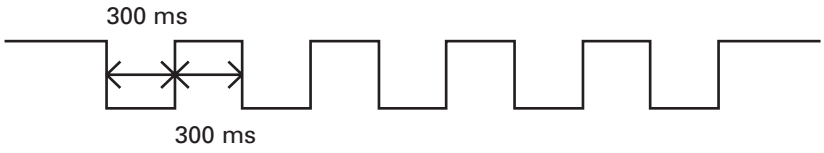
● **LCD(CAW1931)**



7.3 OPERATIONAL FLOW CHART



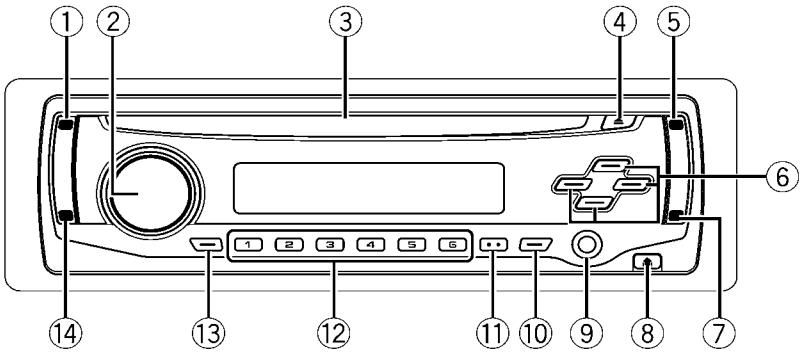
Starts communication with Grille microcomputer.



In case of the above signal, the communication with Grille microcomputer may fail.
If the time interval is not 300 msec, the oscillator may be defective.

Completes power-on operation.(After that, proceed to each source operation.)

8. OPERATIONS



主机

① **SOURCE按钮**
选择播放源可开启本机。按该按钮可在所有可用的播放源中循环。
播放源关闭时，按住该键来调用初始菜单设定。

② **VOLUME**
旋转该按钮可调高或调低音量。

③ **CD装载槽**
插入要播放的碟片。

④ **EJECT按钮**
按该按钮可从内置式CD播放机内退出CD。

⑤ **AUDIO按钮**
按该按钮可选择各种音质控制。

⑥ **▲/▼/◄/►按钮**
按该按钮可进行手动搜索调谐、快进、快倒和曲目搜索控制。同样还可用于控制功能。

⑦ **FUNCTION按钮**
操作播放源时，按该键来调用功能菜单。

⑧ **DETACH按钮**
按该按钮可将前面板从主机卸下。

⑨ **AUX输入插孔（3.5 mm立体声插孔）**
用来连接一个辅助设备。

⑩ **EQ按钮**
按该按钮可选择各种均衡器曲线。
按住该按钮可开关响度。

⑪ **PAUSE按钮**
按该按钮可开关暂停。

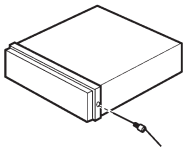
⑫ **1至6按钮**
按该按钮可进行预设调谐。

⑬ **CLOCK按钮**
按该按钮可切换至时钟显示。

⑭ **BAND按钮**
按该按钮可在3个FM波段和1个AM波段之间进行选择，并可取消各功能的控制模式。

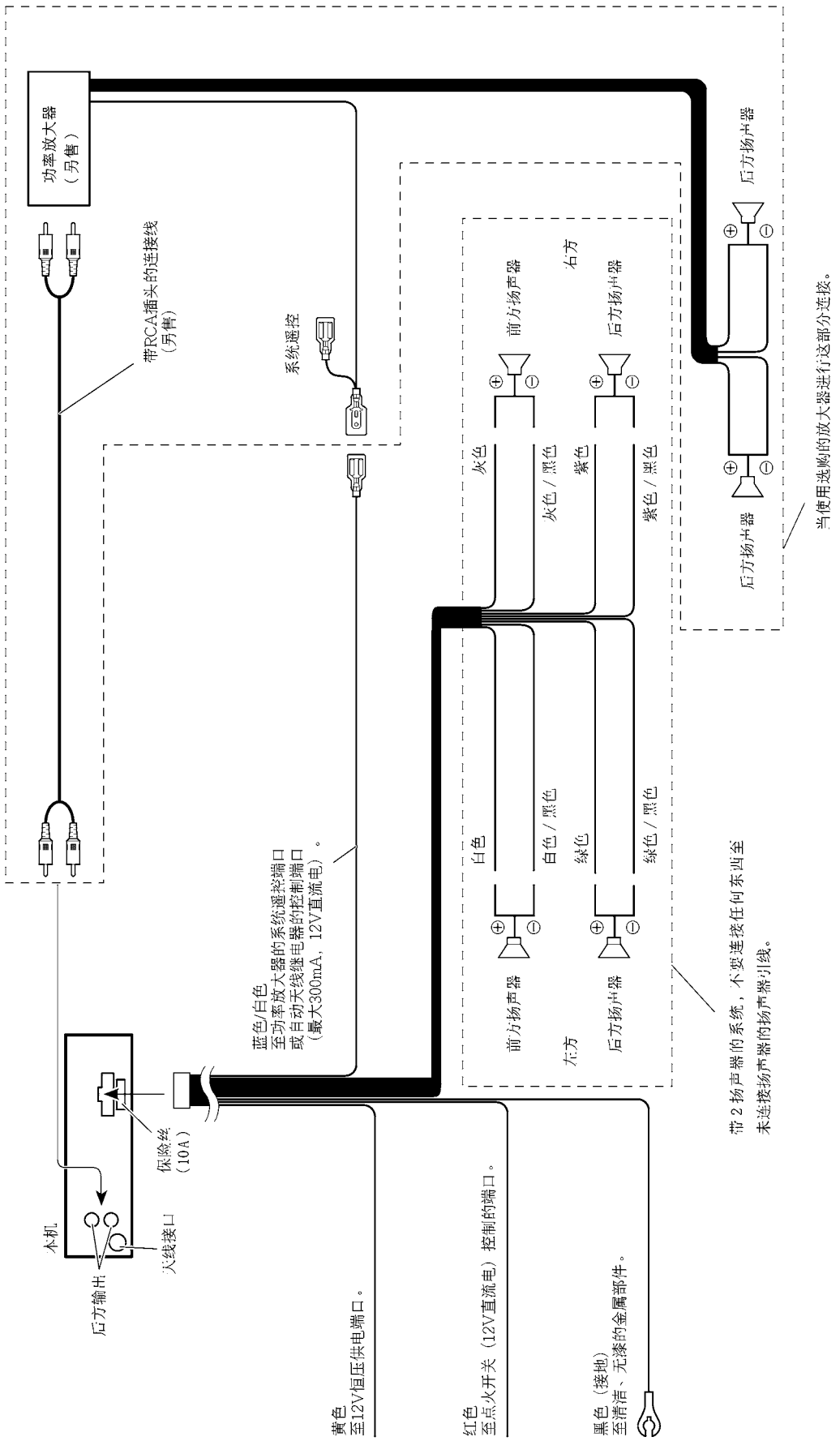
Fastening the front panel

If you do not plan to detach the front panel, the front panel can be fastened with supplied screw.



Screw
(CXX2204)

● Connection Diagram



A

B

C

D

E

F

● Jigs List

Name	Jig No.	Remarks
Test Disc	TCD-782	Checking the grating
L.P.F.		Checking the grating (Two pieces)

● Grease List

Name	Grease No.	Remarks
Grease	GEM1024	CD Mechanism Module
Grease	GEM1045	CD Mechanism Module

Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008